

THE
MEDICAL JOURNAL
OF AUSTRALIA

NOV 27 1929



VOL. II.—16TH YEAR.

SYDNEY, SATURDAY, OCTOBER 26, 1929.

No. 17.

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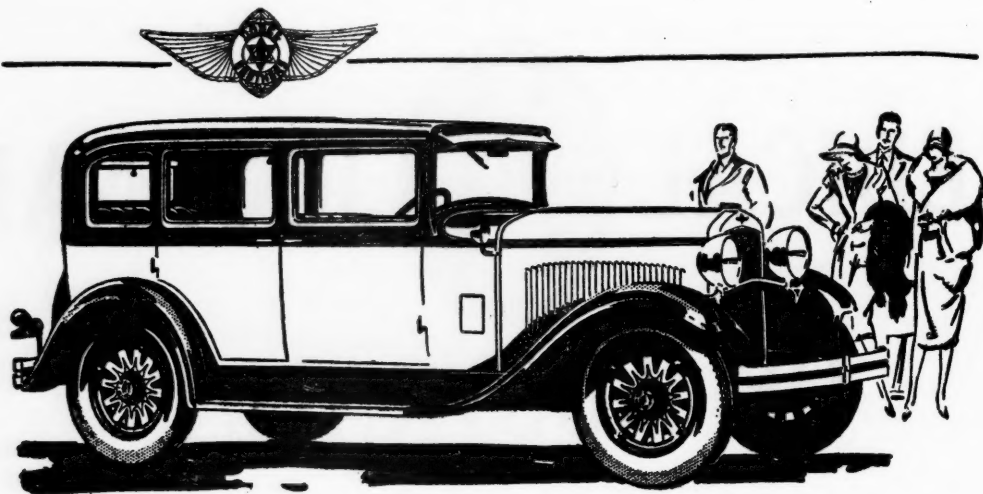
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GENITO-URINARY FISTULÆ: WITH A NOTE ON REPAIRING SOME OF THEM FROM THE VESICAL ASPECT.¹

By GORDON CRAIG, M.B., Ch.M. (Sydney), F.C.S.A.,
F.A.C.S. (Hon.),

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Alfred Hospital.

THERE is no more distressing complaint than incontinence of urine, from whatever cause it may arise. When this condition is complicated with infection of the urinary tract, the unfortunate victims are not only a misery unto themselves but an offence to all who come in contact with them.

It is not to be wondered at that the attention of surgeons has been directed for nearly a hundred years towards a cure for the commonest cause of urinary incontinence in women, namely genito-urinary fistula.

In 1834, Gosset, an English surgeon, described in *The Lancet* of November 29 of that year an operation for the cure of vesico-vaginal fistula by means of gilt wire sutures. This operation was successful in his hands, but was not taken up by his surgical confrères. Some twenty years later, in 1854, Marion Sims came to New York from a wayback town in Alabama seeking health and a wider opportunity of developing his surgical ability. He met with opposition from his colleagues, but some friends rented a small house and handed it over to him as a women's hospital for the treatment of his patients. It was organized at first for the sole purpose of treating vesico-vaginal fistulæ. The essential contribution by Sims towards the solution of this problem was the use of interrupted silver wire sutures after a wide elliptical excision of the edges of the fistula, with the patient in the semiprone position that goes by his name. Sims did for vesico-vaginal fistula what Freyer did for enlarged prostate; each of them demonstrated that a surgical cure was possible for the trouble with which he was dealing; the fact that both operations had been described many years before does not detract from the credit due to these two men; possibly neither of them was acquainted with what was buried in the literature of a past generation and even if they were acquainted with it, the credit of developing and broadcasting it is still due to them. Each of them built up the operation, made it his own, gave it his name and thereby quite rightly acquired an international reputation. Some idea of the extent of Sims's work can be realized from the fact that he reported a series of 261 cases of urinary fistula at the end of his first eight years in the Women's Hospital of New York, the hospital that had such a humble beginning and now ranks amongst the foremost of its kind.

It is to be remembered that Sims worked in the days before Lister and before local or general

anæsthesia came into general use and yet the methods he used were eminently successful. The reason for his success was the fact that pure silver wire in animal tissue is an active antiseptic. He was careful to coapt, but not to compress the raw edges of the fistula by means of this interrupted silver wire suture. Of a series of 261 patients he permanently cured 216, a result of which any surgeon of today with all his advantages might be proud.

The origin of the flap-splitting operation for vesico-vaginal fistula is ascribed to various authors according to the respective literature of England or America. Mackenrodt is credited with the discovery in Europe, Colles of Dublin, of fracture fame, was given this honour in England, while Hayward, of Boston, as far back as 1839 described an operation for the cure of vesico-vaginal fistula that embodies the underlying principle of the flap-splitting operation of today.

The surgery of vesico-vaginal fistulæ interests not only the gynæcologist and the obstetrician, but the general surgeon and of latter years the urologist. The latter has been brought in to deal with the intractable fistulæ and particularly those that are complicated by lesions of the ureter and kidney.

In Gosset's and Sims's day obstetrical injuries were the only cause of vesico-vaginal fistulæ; but with the rise of gynæcology and the developments of the operation for the complete removal of the uterus for malignant or inflammatory disease it is doubtful if childbirth can claim the greater share of blame.

Post-operative fistulæ form the greater proportion in our series. Gynæcologists, as they progress in experience and dexterity, naturally give a greater number of patients with advanced malignant disease of the uterus a chance of a radical cure. What they would have considered inoperable in their earlier years, would in their riper years be included in the operable class. A thorough removal of the uterus and adnexa means a clean dissection of the lower ureters. This step imperils the blood supply and the ureter may slough in its terminal portion. The ureter may then discharge its contents down through the vagina or forward through the abdominal wound. At other times the ureter may contract at the point where the devitalized portion has sloughed away and lead to a hydronephrosis or pyonephrosis. In the same case the sloughing of the ureter may involve the adjacent bladder wall and allow the contents of the bladder also to leak into the vagina. In circumstances like these an accurate survey of the urinary tract by a full cystoscopic examination is the initial step towards a cure.

The tyro or occasional trespasser into gynæcological surgery may in a simple hysterectomy be so excited by hæmorrhage that in his hurry he clamps not only the uterine vessels but the underlying ureter as well. This error in technique may be followed by a uretero-vaginal fistula; in one of our series not only was the ureter injured by clamping, but the bladder as well. A uretero-vaginal and

¹Read at a meeting of the Section of Obstetrics and Gynæcology of the New South Wales Branch of the British Medical Association on June 19, 1929.

vesico-vaginal fistula followed. Rough and careless technique may injure the bladder while it is being separated from the uterus. Unless the injury is recognized and adequately repaired, a vesico-vaginal fistula will result.

It is a fact to bear in mind that if a ureter in an uninfected urinary tract be ligatured, the kidney will be at first converted into a hydronephrosis and later become atrophic. If both ureters are ligatured, then death from obstructive anuria will follow unless the cause is recognized early enough by a cystoscopic investigation of the ureters. We have seen an example of a urinary fistula follow a unilateral ligature of the ureter a week after the operation. The pressure of the retained urine was sufficient to burst through the softened ligature.

Yet another cause may give rise to genito-urinary fistula in women. A stone may become impacted in the lower ureter just outside the bladder wall and lead to the formation of an abscess which bursts through the vaginal vault. The urine will then follow the line of least resistance and escape by the vagina.

Trauma from enthusiastic and determined efforts to produce abortion by the patient herself may perforate the vesico-vaginal septum. One cannot withhold a certain amount of admiration for the misplaced fortitude and bravery exhibited by such a woman.

Treatment.

The principles of treatment of genito-urinary fistula are simple. They are governed entirely by the fact that the function of epithelial tissue is to keep surfaces apart, while the function of connective tissue, as the name implies, is to keep them together. The technique required to carry out these principles presents some of the most difficult problems in surgery.

The straightforward median fistula in the vesico-vaginal septum following obstetrical trauma is the simplest to deal with. Good exposure can be obtained by a suitable speculum. Traction on the margins of the fistula by suitable vulsellum forceps will bring the field of operation on to the surface of the perineum. The vaginal mucous membrane should be divided longitudinally and separated by scissor dissection from the bladder wall; 1.25 centimetres (half an inch) of separation from the margins of the fistula is usually sufficient. A continuous plain buried catgut suture, about number two in size, is used to approximate the bladder mucous membrane in a transverse axis. In small fistulae a buried purse string suture is sufficient. A similar catgut suture is applied to approximate the vaginal mucous membrane in a longitudinal direction.

Drainage of the bladder by an indwelling catheter for about a fortnight is essential. All plastic work on the urinary tract should be relieved of any tension on the edges of the wound during the healing stage.

The most difficult vesico-vaginal fistula is the post-operative type situated high up in the vaginal vault. There is usually a puckered, fixed, indented scar and in one of the indentations is situated the fistula. Some we have repaired by the vaginal route, but if much difficulty is experienced in exposing the field of operation, we do not hesitate to open the bladder suprapubically and perform the flap-splitting operation from the vesical surface. To one used to working in the bladder this is sometimes the most satisfactory way of obtaining a cure. The mucous membrane of the bladder is dissected up around the fistula and retracted. A purse string catgut suture is used in the submucous tissues of the vesico-vaginal septum in such a way as to invert the mucous membrane into the vagina. The mucous membrane of the bladder is coapted by a continuous catgut suture. A suprapubic drain in the form of a de Pezzer catheter is kept in for a fortnight.

In one case of this type we failed to cure a fistula following a hysterectomy for carcinoma of the cervix. This was not a failure in technique, but a failure in recognition of the fact that an early recurrence of the carcinoma had occurred at the site of the fistula. Where there is a unilateral uretero-vaginal fistula with obliteration of the vesical end of the ureter, as demonstrated by cystoscopic examination, we do not hesitate to remove the kidney on the side of the fistula, if the function of the remaining kidney is good.

We are at present dealing with a bilateral lesion of this type. We have had to remove the kidney on one side for a secondary pyonephrosis. We intend to complete the operation by doing a ureteral transplantation into the bladder if possible or, failing that, into the adjacent lower bowel. In nearly all patients suffering from vesical fistula when seen at an early stage the bladder exhibits more or less definite cystitis. We have found that it is wise to wait until these symptoms of acute cystitis have subsided before attempting a reparative operation.

Finally, when the fistulous tract lies close to the ureteral orifice, we make a practice of passing a ureteral catheter up that ureter or both ureteral orifices if the fistula is large and goes close to both ureters. Sims, when demonstrating in England the technique of his operation for the first time, had the misfortune to include both ureters in his sutures. The patient died with obstructive anuria in a few days. This was the only time such an accident occurred in his work.

This is only a short *résumé* of our experience with genito-urinary fistulae; but even so, it is evident that in their treatment some problems present themselves which require a thorough survey of the whole urinary tract by a competent observer.

Conclusions.

1. Obstetric trauma used to be the sole cause of vesico-vaginal or what is better termed genito-urinary fistula.

2. Post-operative fistulæ after the radical operation for carcinoma of the uterus form the greater number of our series.

3. Some of these are more easily approached from the vesical than the vaginal route.

4. The ureters and indirectly the kidneys are frequently involved as well as the bladder in the post-operative group of genito-urinary fistulæ; when this is the case, an accurate survey of the whole urinary tract by a competent observer is necessary.

THE TRANSVESICAL OPERATION FOR VESICO-VAGINAL FISTULA.¹

By R. J. SILVERTON, M.B., Ch.M. (Sydney), F.R.C.S. (Edinburgh), F.C.S.A.,

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DURING the past few years urologists have on a few occasions described the repair of vesico-vaginal fistulæ from the bladder aspect, but as these fistulæ are nearly always dealt with by the gynæcologist, only very little urological experience has accumulated. With the greatly extended development of intravesical technique, many urologists have come to believe that their cooperation may be of great value in certain of the more difficult cases. The difficulty is to secure the invitation to cooperate. Hugh Hampton Young, of Baltimore, who deals with an enormous amount of urological work, in his recent "Practice of Urology" is able to devote only a very few pages to vesico-vaginal fistula, stating that the gynæcologists see most of these patients. On the other hand, Howard Kelly who has always mixed urological and general abdominal work with his gynæcological practice, deals with the subject at great length. But, although Kelly describes both the intraperitoneal and intravesical method of approach, it is easily seen that he relies chiefly on the vaginal operation for the solution of most of these problems. Indeed Kelly seems to be at particular pains to enlarge the scope of the vaginal approach by means of special methods of incision and retraction. When the fistula is extremely high, as in the vesico-uterine variety, he is forced to desert the vaginal approach, only to adopt the more heroic expedient of performing hysterectomy to clear the way for an abdominal approach to the fistula. To the urologist who is so used to bringing the floor of the urinary bladder into easy reach and clear vision by means of recent methods of retraction and illumination, it seems that, for the more highly situated fistulæ at least, the transvesical approach is the more direct and efficient.

So much for the primary problem which is the approach; we must now briefly enumerate the fundamental factors leading to the success of the repair operation. They are complete excision of the fibrosed

edge of the fistula, mobilization of the layers implicated, correct apposition of all or some of these layers and finally appropriate after-care designed to prevent breaking down in the line of repair.

I have referred above to the fact that with bladder approach the fistula lies under the hand as it were, so that excision of the fistula and mobilization of the layers are rendered very easy in fistulæ lying at a high level. Two or more traction sutures are passed through the edge of the fistula and these are held taut while the edge of the tract is completely excised with a long, straight, narrow bistoury (see Figure I). Traction sutures are now placed at

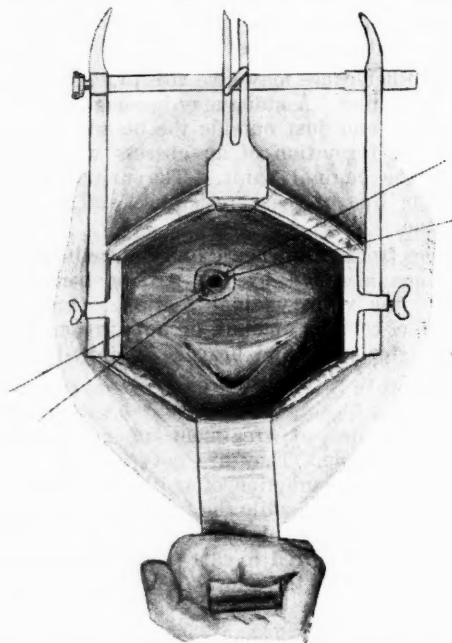


FIGURE I.

Appearance of the Bladder Floor at Suprapubic Operation with wide Retraction. This shows how a fistula which lies at the very vault of the vagina and is therefore difficult to reach, especially when the uterus is absent, now comes clearly into view under the surgeon's hand as it were. Retraction sutures are shown pulling on the edges of the fistula. The dotted line indicates the incision to excise the fistula.

intervals around the edge of the tract, piercing only the bladder mucosa and a part of the muscle. With a long-handled, double-edged knife, having the short blade making an angle with the shaft (see Figure II), the vaginal mucosa is dissected up from the bladder muscle.



FIGURE II.

Suitable Form of Knife, with Long Handle and Double-edged Blade to effect the Dissection between the Bladder and the Vagina.

The extent to which this dissection can be done, varies with the condition of the parts, but it is really only necessary to mobilize to such an extent as will

¹Read at a meeting of the Section of Obstetrics and Gynaecology of the New South Wales Branch of the British Medical Association on June 19, 1929.

allow the bladder muscle to be drawn together without tension. The bladder muscle is the most important layer to repair in securing a watertight joint and when the bladder mucosa is sewn up very neatly over it, the certainty of complete success is enhanced. I consider that a neat, deep-biting, continuous suture is best for this purpose and that it should be simply of moderately heavy plain catgut for the muscle and fine plain catgut for the mucosa. Before the bladder layers are sewn up the vaginal mucosa, if rendered sufficiently mobile by the dissection, should be sutured with fine chromicized catgut. Where proper mobilization has been impossible the vaginal mucosa may be left unsutured, for one may be sure that, with the bladder layers sewn up so snugly from the inside of the organ, the urine will be well retained and epithelialization will occur later over the bare area on the vaginal wall.

The bladder *muscularis* is a comparatively thick layer which is easily mobilizable and which heals very readily when sewn up with plain catgut. Urologists are used to the rapid healing by first intention of the bladder wall, not only on its roof, but on its floor and sides, provided the bladder is not allowed to become distended during the first week after operation. In my everyday practice I practically never have to make use of any form of suction apparatus, designed to facilitate healing by keeping the bladder dry, for the simple reason that it does not seem to be necessary. The all important thing is to secure strong apposition without tension of the freshened edges of the bladder *muscularis* and mucosa. In order to avoid all danger, then, of tension after the operation, I prefer to leave a small de Pezzer drain in suprapubically, as well as to place a still smaller one in the urethra. The suprapubic drain is pulled out at the end of a week or so and a few days later, when the tiny suprapubic opening is healing up well, the urethral catheter may also be removed. The patient will now be able to pass water naturally and should be able to leave hospital a few days later. No suction or irrigation need be used, but in order to combat any sepsis, existing or potential, a few drachms of 1% mercurochrome solution may be instilled once or twice a day.

The whole of the management is thus rendered easy, certain and quite comfortable for the patient and can hardly be considered to come within the category of a dangerous or serious operation.

I have cured four simple vesico-vaginal fistulae by this means in addition to a very difficult fistula which I wish briefly to describe here, as it illustrates very well the value of this approach.

This patient, aged forty-one, had undergone total hysterectomy five weeks before I saw her. About eight days after the operation urine was discovered leaking from the vagina. On vaginal examination, the actual opening, being small and right up at the vault, was not easily demonstrable, but on cystoscopy a hole about four millimetres in diameter was seen on the floor of the bladder near the middle line, about three centimetres behind the interureteric bar. A ureteric catheter passed

through this opening issued into the vagina through a small hole near its sutured vault. As there was no uterus present to be pulled down and so help to make the fistula easily accessible through the vagina, I advised suprapubic operation and performed a transvesical repair following the method outlined above. A couple of weeks after the operation, when the patient was passing urine naturally, I made a cystoscopic examination and had great difficulty in finding the line of suture, as it was so perfectly and cleanly healed.

May I conclude with a plea that gynaecological surgeons will ask for the opinion of a urologist in large or high vesico-vaginal fistulae and in those implicating the cervix or body of the uterus. It may be that in certain especially difficult cases a combined operation, performed by both specialists, will give the patient the greatest possible chance of a complete cure at one operation. On the other hand, in the case of fistulae lying at such a level in the vagina that they are easily accessible, the usual vaginal operation is probably all that is required, except where the fistula is very large, where there is a great extent of scar tissue or where there are multiple fistulae; in such cases I think that the transvesical operation with suprapubic after drainage should lead more certainly to success.

BILHARZIA IN IMMIGRANTS FROM PALESTINE¹

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IMPORTED cases of infestation with *Schistosoma hæmatobium* were occasionally met with in Australia prior to the South African War, but the danger of bilharzia becoming endemic in this country was first realized when soldiers with the disease returned from this campaign. It is generally agreed that untreated patients continue to pass viable ova in the excreta for indefinite periods after infestation and we have hatched out miracidia from terminal spined ova in the urine of a patient eighteen years after exposure to the cercariae of *Schistosoma hæmatobium*. In heavy and especially in repeated infestations, common causes of death are vesical carcinoma, ascending renal infection and chronic interstitial nephritis. Pyonephrosis is often associated with the latter condition, both being largely dependent on bilharzial involvement of the lower third of the ureters with consequent back pressure effects on the kidneys. Chenhall⁽¹⁾ reported a fatal case in Australia where death was due to carcinoma of the bladder and ascending pyelonephritis.

A brief review of the observations of Australian investigators on this subject in the past few years

¹ This work was carried out under a research grant from the Department of Health, Commonwealth of Australia.

is appended. Nelson⁽²⁾ reported the infestation of two people in Western Australia. They had never been out of the Commonwealth. The infection was traced to a British ex-soldier employed at a saw mill. He had contracted the disease in South Africa twelve years before. Ova were demonstrated in the urine of all three patients. In view of the life history of this parasite, which was elucidated by Leiper,⁽³⁾ it is obvious that some species of Western Australian mollusc is capable of being naturally infected and of acting as an efficient intermediary host for *Schistosoma hæmatobium*. Cherry⁽⁴⁾ exposed some three hundred snails of the genera *Bullinus*, *Ancylus* and *Planorbis* to bilharzial miracidia, but the development of cercarial forms was never observed. He pointed out that these results were of little significance in view of the proved focus of infection reported by Nelson.

In 1916 in Cairo Lawton⁽⁵⁾ investigated twenty-four soldiers suffering from an obscure illness in which abdominal pain and diarrhoea associated with an enlarged tender liver, splenomegaly, bronchitis and urticaria were the outstanding features. Blood and mucus were sometimes present in the stools, there was a definite eosinophilia and lateral spined ova of *Schistosoma mansoni* were found in the excreta. Later in the same year Fairley⁽⁶⁾ found many infestations from Tel el Kebir to be mixed infestations and in association with Manson-Bahr⁽⁷⁾ demonstrated infected snails of both *Bullinus* and *Planorbis* genera at the Rifle Range canal in that vicinity. Troops infested at Serapeum developed fever and urticaria, even though they were infested exclusively with *Schistosoma hæmatobium*. During the next two years Fairley⁽⁸⁾ studied the experimental pathology of bilharzia in monkeys as compared with the hitherto described lesions in man and he⁽⁹⁾ introduced a complement fixation test for the serological diagnosis of infestations with *Schistosoma mansoni* and *Schistosoma hæmatobium* using as antigens saline extracts and alcoholic extracts of livers of snails infested with bilharzial cercariæ. Later Dew⁽¹⁰⁾ made an extensive pathological study of infested human tissues describing lesions similar in type to those found by Fairley in experimentally infected monkeys.

The logical outcome of Leiper's work⁽³⁾ was the confinement of infected patients to sewered areas and this was emphasized by Cherry⁽⁴⁾ and Fairley and Manson-Bahr.⁽⁶⁾ Fairley⁽¹¹⁾ reported successful results in three patients treated with intravenous injections of tartar emetic as advocated by Christopherson⁽¹²⁾ and urged that infected Australian soldiers should receive this treatment at as early a date as possible. Summons and Irving⁽¹³⁾ obtained success with this method in twenty-nine proved cases of bilharzia and confirmed the original observation of Walton Smith⁽¹⁴⁾ that occasionally ova could be detected in the peripheral blood in fresh smears from the finger. Shaw⁽¹⁵⁾ observed the effects of treatment on the cystoscopic appearances of the vesical mucosa and made an important contribution to our knowledge on this subject. Cross⁽¹⁶⁾

published a note on the radiological findings in the lungs of these patients. McWhae and Jagger⁽¹⁷⁾ and Pavy⁽¹⁸⁾ reported the therapeutic results in eleven and ten patients respectively. Thus in 1920 and 1921 the military authorities working in conjunction with Major Holmes, D.S.O., of the Commonwealth Department of Health, instituted treatment in many of the States and the results in more than fifty cases were reported in THE MEDICAL JOURNAL OF AUSTRALIA. Clinically the majority of the patients was regarded as cured. Occasionally two or three courses of treatment were required.

Holland and Woodward⁽¹⁹⁾ in New South Wales give details of a boy aged three years who suffered from hæmaturia and hæmorrhage *per rectum*. This was regarded as bilharzia originating locally and as such is the only endemic case reported since the war. The clinical history was atypical, while many ova were described which were in no way characteristic of schistosome eggs, though it is stated that typical apical spined ova were also present. Fairley and Williams⁽²⁰⁾ described a new intradermal test for bilharziosis on the lines of the Casoni reaction in hydatid disease. Milton⁽²¹⁾ in reviewing the possibility of bilharzia becoming endemic in Australia, concluded that some inhibitive force must exist preventing the disease from obtaining a permanent hold-in the country. In the Commonwealth this force appears to have been the result of the active measures adopted by the military authorities and the Department of Health in confining patients to sewered areas and subsequently effectively treating them, the absence of large tracts of intensive irrigation such as exist in Egypt, the high general standard of sanitation in rural areas and the large proportion of the population living in sewered cities. These factors in our opinion suffice to explain why bilharzia failed to become established endemically in this country after the war, but this should not lead to neglect of the more insidious danger arising from immigrants who perhaps only develop clinical manifestations of the disease after arrival in the Commonwealth.

The following case histories illustrate these possibilities. All of these patients had been in the habit of bathing in fresh water streams around Jaffa in Palestine and had apparently acquired the disease there.

CASE I.—On July 13, 1928, M.M., a Polish Jew, aged fourteen years, was seen by Dr. M. Ashkanasy on account of hæmaturia and pain at the end of micturition which had been present for the preceding four months. He had been in Australia for eight months and had previously lived for some years in Palestine, where in 1921 he had been treated for bilharzia. Cystoscopic examination by Mr. C. J. O. Brown revealed localized nodules scattered through the vesical mucosa with a few patches of granulation tissue involving the upper half of the trigone and the left ureteric orifice. The intravenous injection of indigo-carmin led to the appearance of the dye from both ureters in five minutes. A diagnosis of bilharzia was made and the patient was referred to us for further investigation.

The urine was found to contain pus cells, red blood corpuscles and both terminal spined ova of *Schistosoma hæmatobium* and lateral spined eggs of *Schistosoma*

mansoni. The serum yielded a strongly positive reaction with cercarial antigen in the complement fixation test. A positive result with the intradermal test, recently described by Fairley and Williams,⁽¹⁰⁾ was observed, the wheel measuring 2.6 by 2.6 centimetres within fifteen minutes of the injection.

From August 10 to August 30 the patient received 0.57 gramme (nine and a half grains) of tartar emetic intravenously, injections given on alternate days commencing with 0.015 gramme (a quarter of a grain) and reaching a maximum of 0.06 gramme (one grain). Cystoscopy on August 31 revealed an irritable condition of the bladder which would retain only a few ounces of fluid. Diffuse granular and tubercle-like nodules were still present. On October 26 sigmoidoscopy failed to reveal any abnormality of the lower twenty centimetres (eight inches) of the colon. The patient still complained of frequency of micturition, chiefly nocturnal, and of pain with this act, the pain being referred to the suprapubic region and the penis. The urine contained pus cells, red blood corpuscles and both lateral and terminal spined ova. The lower edge of the liver was just palpable and there was some tenderness in the hypogastrium.

During November and December intravenous injections of tartar emetic were continued thrice weekly until 1.2 grammes (twenty grains) more of the drug had been administered. Individual doses varied from one half to two grains.

On February 8, 1929, microscopical examination of the urine failed to reveal any bilharzial ova. Two months later the serum still yielded a strongly positive result with the complement fixation test in the presence of cercarial antigen. The patient complained of suprapubic pain and nocturnal frequency of micturition.

On April 16 another course of injections of tartar emetic was commenced and after 0.48 gramme (eight grains) of the drug had been given, microscopical examination of the centrifuged urine revealed the presence of a very few pus cells and red blood corpuscles and the shell of one terminal spined ovum from which the miracidium had disappeared. The faeces showed no abnormality microscopically. Occasional pain was present in the right loin and the suprapubic region, while micturition was often accompanied by a burning pain in the urethra. There was no increased frequency of micturition by day, though it was necessary to pass urine once during the night. Nothing abnormal was found on clinical examination.

Five years ago a brother (B.M.) of this patient had been treated in Palestine for bilharzia. Clinical examination and microscopical examination of the urine now reveal no abnormality, though the serum yields a weakly positive result (P.+) with the complement fixation test for this disease.

CASE II.—M.L., a Russian Jew, aged eighteen years, was referred by Dr. M. D. Silberberg for investigation and treatment as terminal spined ova were present in the urine. This patient had lived in Palestine for some years. Four years previously he had had several attacks of malaria over a period of twelve months. On arrival in Australia in February, 1928, he was apparently well except for a chronic aural discharge. A month later he developed frequency of micturition, the bladder being emptied some ten times during the day and thrice during the night. There was suprapubic pain and scalding during the act of passing his urine. These symptoms had persisted until he was seen on October 9, 1928. The urine then contained pus cells, red blood corpuscles and terminal spined ova of *Schistosoma haematobium*. With the complement fixation test for bilharzia, the serum yielded a strongly positive result. Ova of *Trichocephalus dispar* were found in the faeces. The eosinophile cells comprised 1.0% of the total leucocytes of the blood. Apart from chronic *otitis media* clinical examination revealed no other abnormalities.

From October 25 to December 1 a total of 1.65 grammes (twenty-seven and a half grains) of tartar emetic was given by intravenous injections on alternate days, the

maximum dose at any injection being 0.12 gramme (two grains). Cystoscopy on November 11 revealed only one very small patch of ulceration of the vesical mucosa.

On April 24, 1929, the serum still yielded a strongly positive result with the complement fixation test in the presence of cercarial antigen.

On May 13, 1929, a centrifuged specimen of the urine showed a few pus cells and red blood corpuscles, but no ova were detected. The patient complained of constipation and some flatulent dyspepsia, but had no symptoms referable to the genito-urinary tract, while nothing abnormal was detected on clinical examination.

The patient stated that his brother who accompanied him to Australia, suffers from urinary symptoms similar to those previously complained of by him. Up to the present time there has been no opportunity of investigating this condition.

CASE III.—J.S., male, aged sixteen years, arrived in Australia one month before he was seen on October 30, 1928. For eight months he had noticed urethral and suprapubic pain on micturition with intense urinary frequency, but no haematuria. He had consulted a doctor in Palestine, but had received no treatment. His skin had recently undergone a yellowish discoloration and he had lost some weight. Clinical examination revealed only some tenderness in the hypogastric region.

The urine contained pus cells, red blood corpuscles and both terminal and lateral spined ova. A strongly positive result was obtained with the complement fixation test. Cystoscopy revealed many scattered yellowish nodules in the vesical mucosa. From November 11 to December 23 a total of 1.8 grammes (thirty grains) of tartar emetic was given by intravenous injections on alternate days. On November 26 cystoscopy showed ulceration of the mucosa especially in the trigone area and numerous patches of inflamed mucosa with nodules which were now white instead of yellow in colour. Much haemorrhage followed this examination.

On December 9, 1928, and again on February 5, 1929, no ova were found in the urine, but the patient still complained of pain at the end of micturition, while the bladder was emptied six times during the day and once during the night. Cystoscopy showed small scattered whitish nodules in the vesical mucosa. On April 10, 1929, the serum yielded a strongly positive result with the complement fixation test. After four intravenous injections of tartar emetic totalling 0.15 gramme (two and a half grains) two centrifuged specimens of the urine (May 12 and May 13) showed nothing abnormal on microscopical examination. At this stage the patient not infrequently got up once during the night to pass water, which he did four or five times during the day. There was urethral pain occasionally on micturition and at other times he complained of pain in the suprapubic region and also in the upper part of the abdomen. The only abnormality detected by clinical examination was slight suprapubic tenderness.

CASE IV.—S.S., aged fourteen years, a brother of the previous patient, had never observed any urinary symptoms. The first examination of the urine on November 22, 1928, failed to reveal any ova, though a few pus cells and an occasional red blood corpuscle were present. The serum yielded a positive result with the complement fixation test and cystoscopy showed a heavy sowing of nodular tubercles in the vesical mucosa. The eosinophile cells comprised 8% of the total leucocytes which numbered 10,200 per cubic millimetre. Reexamination of the urine revealed pus cells, red blood corpuscles and terminal spined ova of *Schistosoma haematobium*. In the following two months a course of injections of tartar emetic totalling 1.8 grammes (thirty grains) was given, the maximum dose at any injection being 0.09 gramme (one and a half grains). On April 16, 1929, he stated that he was quite well apart from an occasional pain in the right loin. He micturated four or five times during the day and sometimes once during the night. A week later the serum yielded a strongly positive result with the complement fixation test in the presence of cercarial antigen. On May 13, 1929, microscopical examination

of a centrifuged specimen of urine revealed nothing abnormal.

This patient and his brother are now living on a farm at Berwick, in an unsewered area.

Commentary.

All these patients came from Palestine, all had bathed in fresh water streams around Jaffa and all were infected with *Schistosoma hæmatobium*. In addition two of them had lateral spined ova of *Schistosoma mansoni* in the urine, though there was never any complaint of colonic symptoms. Repeated examinations of the excreta in the other two cases might have shown them also to be examples of mixed infections. Even in infestation with *Schistosoma hæmatobium* urinary symptoms may be absent as was illustrated in Case IV. In this patient there was both serological and cystoscopic evidence of the disease.

It is noteworthy that only one of these patients had urinary symptoms prior to arrival in Australia. The long incubation period and the latency of the clinical manifestations may make the diagnosis of bilharzia on clinical grounds impossible during the first year after infestation and this group of cases could only have been detected by routine serological tests and examination of the excreta. These measures are perhaps too detailed for universal adoption by the public health authorities and the danger to the Commonwealth from such immigrants can at present only be met by practitioners taking bilharzia into account in the investigation of patients with vesical and dysenteric features, especially when there is a history of residence in countries such as Egypt, Palestine, Mesopotamia, Africa, South America, Japan and China, where this disease is endemic.

Summary and Conclusions:

1. The presence of vesical bilharzia (*Schistosoma hæmatobium*) in four immigrants from Palestine is recorded. Two also had ova of *Schistosoma mansoni* in the urine.
2. All four patients appear to have contracted the disease when bathing in the vicinity of Jaffa.
3. Only one of these patients had developed symptoms prior to arriving in Australia.
4. All patients yielded positive results with the complement fixation reaction for bilharzia and the value of this test during the long latent period preceding the onset of urinary or colonic features is strikingly illustrated.
5. To prevent the spread of the disease in the Commonwealth it is essential that an early diagnosis of the condition should be made and treatment instituted as soon as possible.

Acknowledgements.

We are indebted to Dr. M. Ashkanasy and Mr. C. J. O. Brown and to Dr. M. D. Silverberg for referring their patients to us for investigation, to Dr. Eric Cooper for doing cystoscopic examinations in three of the patients and to Miss F. E. Williams who performed the complement fixation tests and examined many of the urinary specimens.

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SOME SURGICAL IMPRESSIONS ABROAD.¹

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OUR President has asked me to give you some of the impressions in surgical work which I got during my trip abroad. These are scrappy, but may be of interest to some of you.

One of my most interesting visits was to the clinic of Dr. Nordenbos at the Binne Gasthaus in Amsterdam. On my arrival I was given a seat of honour on the dais while he gave a lecture on empyema to his class consisting of seventy students. His most striking work, however, was on the treatment of fractures.

He operates on practically every patient with fracture of the femoral neck high up (but not in the intertrochanteric type). He utilizes a bone graft from the patient's own fibula of the same side (which gives no disability as far as the fibula is concerned). Very careful measurements are taken to insure that the fibular graft enters the neck of the femur and does not project through the head into the acetabulum. His main guide is the X ray plate which he takes as being one-third larger than the patient's skeleton. To insert this graft he drills a hole and the fibula, freed from muscle, is hammered in, the spreading of the hit surface being prevented by a spoon. The thigh and trunk are at once placed in plaster with the hip abducted 60° and inwardly rotated 15° which is the Whitman position. This is kept on for three months and the patient is not allowed to bear weight on it for six months for fear of the development of *coxa vara*. When the plaster is removed, joint movements are encouraged by sitting the patient on a truck whose wheels run on small rails at the side of the bed. The patient moves this backwards and forwards by a rope, while the feet are against a fixed board, in this way producing joint movements without weight bearing. Dr. Nordenbos has operated on 160 patients without a failure and he showed me some of his results which were really excellent. Another day I was privileged to go round with him alone and was shown two wards devoted entirely to patients with fractures. No rigid splints of the Thomas type are ever used, but the limb is slung on a strong canvas, the ends of which are held by a bent metal rod hung from an overhead post. Extension is obtained by callipers going on to or into the bone. This is used even in elbow fracture in a child. There is really less discomfort produced in this method than by the ordinary pull by surface strapping. Active movements at the joints are encouraged on the second day. The results I saw were very good, but I should like to have seen a patient with, say, fracture of the femur at the junction of the upper and middle third, treated in this manner. In contrast to this method is that adopted by Dr. Sinclair, the originator of

the special footpiece and adhesive glue that bear his name, at St. James's Hospital. He treats all his fracture patients by a rigid metal splint of the Thomas type which is modified in various ways. When apposition of the bones is at all difficult, he uses a Lane's plate, but, recognizing the liability of this to give trouble, he invariably removes it in about six weeks and before the patient leaves the hospital. The good results obtained by these diverse methods go to show that success in treatment of fractures depends on individual care and attention rather than on any special method or apparatus. I found the Dutch surgeons very interested in Australia, for the first reliable discovery of our land was made by the ships belonging to the Dutch East India Company early in the seventeenth century. When endeavouring to reach Java after rounding the Cape, by keeping unduly south a little eastern tend brought them against the coast of Western Australia which the ship *Eendracht* touched in 1616. The reason why we are not living in a Dutch colony like Java is that the Western Australian coast is perhaps the most arid and inhospitable part of our continent and trading was impossible with the aborigines whom the Dutch described as "utter barbarians," and of course they had no knowledge of the gold and silver Australia contains.

In Edinburgh I was fortunate to see a good deal of Wilkie who was taking a post-graduate class for candidates for the fellowship. His audience was a cosmopolitan group and included students of all nationalities and colour. The teaching in Edinburgh is excellent and makes me a little ashamed of what we have in Melbourne.

In the treatment of early gastric ulcer Wilkie performs a gastro-duodenostomy. In doing a gastro-jejunosotomy he warns against making the opening too far to the left, because this favours bile stagnation and regurgitation as the stomach contents are propelled past the opening. The actual operation is performed with clamps which are not shielded with rubber and no abdominal retractors are used. Muscle relaxation is effected by blocking the motor nerves with a 0.5% solution of "Novocain" injected along the lower costal margin.

In London itself the extreme degree of specialization is strange to an Australian and this is possible from the immense population there is to draw from; London itself is a larger field than the whole of Australia. This seems to be the reason why highly special work such as nerve surgery and thoracic operations is better learned in the old country. In the ordinary routine of operative surgery the technique may be good, but there is little to choose between English surgery and what we see in our own hospitals.

Another feature that impressed me was the large amount of hospital practice compared with private practice and to compensate for this the fees charged for operations are very much larger than we usually get here. It appeared to me that the best treatment in England was obtained by the very rich and the poor and that the middle class was not well served.

¹ Read at a meeting of the Victorian Branch of the British Medical Association on June 5, 1929.

A most instructive ward round was taken with my old friend Dunhill who once a week did his visiting with Mr. Gasc and the corresponding physician and pathologist. In this way is obtained an opinion from every point of view, such for example as the question of partial gastrectomy in simple ulcer. A surgeon is apt to pride himself on such a patient who leaves hospital relieved of pain and indigestion after such an operation. A discussion I listened to brought out the late history of such patients, especially with regard to the anæmia almost approaching the pernicious type which often results.

Mr. Dunhill and other surgeons at Saint Bartholomew's have largely given up operating on malignant disease of the breast. He showed me a patient who had originally an inoperable growth and who as the result of radium application had only an inconspicuous scar and was apparently cured. Following this result he treats with radium patients whose growths ordinarily would be regarded as quite operable. Serial sections have been taken in such patients who have been cured by radium therapy and no malignant cells have been found. This colossal undertaking has been done in the Radium Institute in London and also by Burton Lee in New York, the whole breast being sectioned. These results make one rather uncertain as to the correct treatment of cancer of the breast and I had a very interesting talk with Sampson Handley on this point. His attitude is to my mind the reasonable one at the present time and he advises the surgical removal of the gland when possible and the immediate implantation of radium needles in areas where extension is most likely to occur and which are unsuitable for the knife. (Mr. Handley, by the way, uses the diathermy knife.) Such areas are the supraclavicular region and the inner ends of the four upper intercostal spaces. He implants needles holding five milligrammes of radium and leaves these in for twenty-four hours. If the destruction of cancer by radium turns out to be a permanent phenomenon, he will discontinue surgical removal. To prove this position a period of perhaps another ten years will be necessary, for it has been shown experimentally that radium can inhibit division in cancer cells for two years, though after this time the growth goes ahead.

Probably the most enthusiastic exponent of radium therapy is Sandford Cade at the Westminster Hospital. His results are most remarkable, especially in cancers of the tongue and lip, for there is no doubt these disappear completely after implantation of radium, leaving a hardly perceptible scar. The advantages of this over surgical removal with the disfigurement and definite risk are obvious and they are possible in patients whose growths are surgically inoperable. Here again we cannot yet say if these results will be permanent and we shall have to wait some years before giving a dogmatic opinion. Of course in epithelioma of the tongue the difficulty and danger usually lie in the glandular involvement of the neck. In this position Cade does a Crile block

dissection and I saw him perform a most thorough dissection under local anæsthesia, blocking the upper four cervical nerves as they come out of the intervertebral foramina. After this operation and without it in inoperable growths surface irradiation is done with radium embedded in a collar made of wax (Columbia paste). Of course the dose and duration of radium action are greater when it is used as the sole method of attacking the glands than when it is used as an extra precaution after gland removal.

After wearing such a collar for twelve to sixteen hours a day for ten days, the skin becomes red and blistered and the hair falls out (a further dose would, of course, produce a burn) but this reaction disappears in time.

Much attention is being given to the surgery of gastric and duodenal ulcers with some difference in procedure. Joll at the Royal Free Hospital invariably performs an extensive removal of the pyloric portion of the stomach for most gastric and duodenal ulcers and an anterior or posterior Pólya anastomosis of the remaining stomach to the jejunum. The duodenum is closed. This appears a very formidable operation and, though the mortality is small in Joll's expert hands, would I feel certain be unsuitable for recommendation as the routine practice for the average surgeon. However well done, it is apt to be followed by the anæmia I have previously referred to.

Walton at the London Hospital does the same for ulcers near the pyloric ring, but he excises ulcers away from this region by a V-shaped incision. This is not enough and must be followed by a gastro-jejunosomy and with ulcers in this position he considers jejunal ulcers do not occur. We must all agree that simple excision of the ulcer without a short circuit is very frequently followed later by recurrence.

Rather curiously Balfour's method of cauterization and destruction of the ulcer does not appear to be popular in England.

To insure alkalinity after a short circuit and also rapid emptying of the stomach a temporary pyloric occlusion is done by mattress sutures of catgut which effect their object for about six weeks. By this time all the gastric suturing has firmly healed. All agree that administration of alkalis is essential for at least three months after operation. Gastro-jejunosomy alone is rarely done, except for cicatrizing, or perhaps healed pyloric ulcers producing obstruction and this original indication for short circuit is followed by the most satisfactory results.

The operation for the relief of enlargement of the prostate gland is attracting much study. I was present at a discussion on this subject at the hall of the Royal Society of Medicine, Lord Dawson being in the chair. Lowsley, of New York, opened the discussion with a paper advocating the perineal route for removing the gland. He performs this under local regional anæsthesia and he showed his technique with moving pictures. Great care is

taken to avoid opening into the rectum which is very easy. The opening of the ejaculatory ducts is seen and preserved. This greatly diminishes the risk of subsequent epididymitis which may come about the third week. A special retractor is used to pull the prostate into view and the cavity left is plugged for forty-eight hours with vaselined gauze. A more satisfactory drainage and cleansing of the bladder by gravity is the most potent argument in favour of this route and the local anæsthesia enables fluids to be taken in large amounts from the first. Many of the prominent English surgeons took part in the debate and their opinion was almost unanimously in favour of the suprapubic route in ordinary cases.

One sees most of the urology at Saint Peter's Hospital which is an unpretentious house in a terrace situated in Henrietta Street. Its outside aspect is suggestive of a boarding house for financially impoverished students and there is an entire absence of any vacant land around it. The actual work is in pronounced contrast to the humble exterior. Sir John Thomson Walker and Mr. Swift Joly are the main exponents of prostatectomy. The latter performs the operation under open ether anaesthesia and if the patient is at all dusky 95% oxygen and 5% carbon dioxide are played from a cylinder under the mask. Modern prostatectomy is now an open operation where every step is under view. The blind struggles of the surgeon working through a small opening to remove the gland are not seen here. An incision almost up to the umbilicus with a suitable self retaining retractor enables the whole hand to be introduced in the bladder and every step to be seen. The question of renal efficiency determines the one stage or two stage operation, but the former is much to be preferred. After enucleation a small V-shaped piece is cut out of the back of the opening into the prostatic cavity and a circular suture of catgut is run round the posterior two-thirds of this ring. This as a rule effectively controls bleeding which usually comes from a small vessel in this opening. In a minority of cases, perhaps 10%, the hæmorrhage comes from a deeper source and calls for plugging.

Swift Joly has invented a cystoscope which, being English, should appeal to us all. It has an excellent operating attachment and what is remarkable, can, it is said, be boiled. Hot fluids are absolutely fatal to the lenses of the Wolff instrument. I could not help contrasting these elaborate aids to urology with some instruments I saw in the museum at Naples. These had been unearthed from the buried city of Pompeii. As you know, this was a popular seaside resort of the wealthy Romans and was overwhelmed by ashes and scoriæ from Vesuvius in the year 79 A.D.

The instruments found there would be those used by the most learned members of the medical profession shortly after the time of Christ.

Among these appliances was a brass catheter with a double curve, shaped much as a Hegar's dilator. This was the only urethral instrument found among

the various medical relics and its unsuitability for relieving an elderly man with retention is obvious.

The contrast between this crude catheter and an electrical cystoscope is an indication of the strides medicine has made in nineteen centuries.

NOTES ON THE CAUSES OF HAY FEVER AND ASTHMA IN AUSTRALIA.

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So many different substances may cause hay fever or asthma in sensitive individuals that it is often difficult to find out in a particular case which are responsible. An endeavour has been made in this paper to simplify this problem: firstly, by indicating those allergens which have been in our experience the most frequently in demand for treatment; secondly, by listing with their pollinating seasons those plants the pollen of which has been known to cause hay fever in Australia; and thirdly, by giving a list of other plants suspected of causing hay fever here.

The More Frequent Causes of Hay Fever and Asthma.

Table I has been prepared from the records of the Allergen Department of the Commonwealth Serum Laboratories, showing the demand for various protein and pollen extracts for treatment, for a consecutive series of 2,220 prescriptions, representing about half that number of allergic cases (as multiple sensitization is common). This gives a fair indication of the relative frequency of the different sensitizing agents in those cases in which a definite cause can be ascribed; for, as a rule, when specific therapy is used, proof of the cause has first been made by skin testing. It is realized that the demand for pollen or protein extracts for treatment does not exactly correspond in number and kind to the skin reactions obtained, for treatment by specific injections does not always follow the finding of a reaction to the skin test. In some cases removal of the offending protein is sufficient or non-specific therapy with peptone or vaccine may

TABLE I.
Demand for Extracts Used in Desensitization.

Pollens.			Other Inhalants.		
Extract.	No.	%	Extract.	No.	%
Rye grass ..	400	18	House dust ..	195	10.3 ¹
Cocksfoot grass ..	328	14.8	Horse dander ..	118	5.5
Capeweed ..	270	12.2	Hen feathers ..	109	4.9
Prairie grass ..	204	9.2	Duck feathers ..	52	3.1 ¹
Dock ..	77	3.5	Goose feathers ..	32	1.7 ¹
Sorel ..	65	2.9	Cattle hair ..	33	1.5
Sunflower ..	57	2.6	Dog hair ..	28	1.3
Iceland poppy ..	54	2.4	Kapok ..	16	0.9 ¹
Dahlia ..	46	2.1	Rabbit fur ..	12	0.5
Plantain ..	28	1.9 ¹	Orris root ..	4	0.5 ¹
Cosmos ..	35	1.9 ¹			
Sweet pea ..	37	1.7			
Wattle ..	8	0.4 ¹			
Paspalum ..	5	0.3 ¹			
Couch grass ..	7	0.5 ¹			

Total Series, 2,220.

¹ These percentages are obtained from a smaller series, as these substances were not available throughout the whole period.

be preferred as in the treatment of patients who have not been found hypersensitive to any pollen or protein.^{(1) (2) (3)} On the whole, however, the figures give an approximate indication of those substances which most frequently give skin reactions, and the table may prove useful in suggesting in a

Capeweed and prairie grass appear to be next in importance. Hay fever due to capeweed seems to be confined to country districts or to outer suburbs. The Alfred Hospital clinic which deals largely with Melbourne residents, finds it not as important



FIGURE I.
Cocksfoot Grass (*Dactylis glomerata*).

case of asthma or hay fever the more likely offenders.

Although the Serum Laboratories send preparations to all parts of the Commonwealth, a very large proportion of these was used in Victoria and New South Wales, so that these remarks apply particularly to these two States.

Pollens.

From Table I it would appear that rye grass and cocksfoot grass are the most common causes of hay fever. Both grasses shed large quantities of pollen throughout their flowering period and are widely grown in pastures. Rye grass is also used extensively as a lawn grass, so that neither in town nor in the country can the hay fever subject escape from it.



FIGURE II.
Rye Grass (*Lolium perenne*).

a cause as the three grasses, rye grass, cocksfoot and prairie grass.

Dock, sorrel and plantain, three weeds commonly found both in suburban gardens and in the country, are each responsible, according to this series, for 2% to 3% of hay fever or asthma.

Sunflower, Iceland poppy, dahlia, cosmos and sweet pea form a group of about the same importance among the cultivated plants. They are relatively less important, however, because their proximity to the sensitive patient can usually be controlled, making the need for desensitization a secondary matter.

It is of interest to note that although patients often attribute their hay fever to wattle, it is found

to be rarely the cause in this series. Very often some inconspicuous plant such as rye grass, which flowers at the same time, is responsible.⁽²⁾

Couch grass, commonly known as Bermunda grass in America, is there classed among the more frequent hay fever causes. Here, as yet, it appears of minor importance.

This table does not include some plants which have been incriminated more recently. Other grasses which appear worthy of consideration, are canary, Kentucky blue, Yorkshire fog⁽⁴⁾ and kangaroo grass; and Murray or Cypress pine should be suspected in certain districts where it is common.

Other Inhalants.

In the other inhalant group of allergens house dust appears to be by far the most important and recently there has been a striking increase in the demand for extract of house dust for treatment.

The relative importance of other proteins in our experience is indicated by their position in Table I; but the epithelium of any animal may become an important factor in an individual case when the patient comes into intimate or continuous contact with that animal. For example, sheep's wool extract has been used successfully in the treatment of a shearer whose hay fever season corresponded with shearing time.

TABLE II.
Hay Fever Plants.

Order and Sub-Group.	Common Name.	Botanical Name.	General Remarks.
<i>Gramineae:</i>	<i>Grasses.</i>		
<i>Panicum</i>	Golden crown grass.	<i>Paspalum dilatatum.</i>	Northern Victoria, New South Wales, and Queensland: Common fodder grass.
<i>Phalaridea</i>	Canary grass.	<i>Phalaris species.</i>	Common fodder grass.
<i>Festuca</i>	Cocksfoot.	<i>Dactylis glomerata.</i>	Common fodder grass.
<i>Festuca</i>	Prairie grass.	<i>Bromus unioloides.</i>	Common fodder grass.
<i>Festuca</i>	Winter grass.	<i>Poa annua.</i>	Common weed.
<i>Festuca</i>	Kentucky blue.	<i>Poa pratensis.</i>	Common fodder and lawn grass.
<i>Chloridea</i>	Couch grass.	<i>Cynodon dactylon.</i>	Common fodder grass (indigenous).
<i>Hordea</i>	Rye grass.	<i>Lolium perenne.</i>	Common lawn and fodder grass.
<i>Avena</i>	Yorkshire fog grass.	<i>Holcus lanatus.</i>	Weed.
<i>Compositae:</i>			
<i>Helianthea</i>	Sunflower.	<i>Helianthus annua.</i>	Cultivated in gardens.
<i>Helianthea</i>	Dahlia.		Cultivated in gardens.
<i>Helianthea</i>	Cosmos.		Cultivated in gardens.
<i>Arctotideae</i>	Capeweed.	<i>Cryptostemma calandulacea.</i>	Common weed.
<i>Polygonaceae</i>	Dock.	<i>Rumex crispus</i> (and others).	Common weed.
	Sorrel.	<i>Rumex acetosella.</i>	Common weed.
<i>Plantaginaceae</i>	Plantain (ribwort).	<i>Plantago lanceolata.</i>	Common weed.
<i>Papaveraceae</i>	Iceland poppy.	<i>Papaver nudicaule.</i>	Cultivated in gardens.
<i>Coniferae</i>	Pines.	<i>Pinus radiata</i> (and other species).	Common (cultivated).
	Murray cypress pine.	<i>Callitris robusta.</i>	Native tree.

TABLE III.
Plants Suspected as Causes of Hay Fever.

Order and Sub-Group.	Common Name.	Botanical Name.	Flowering Season	General Remarks.
<i>Gramineae:</i>	<i>Grasses.</i>			
<i>Andropogoneae</i>	Kangaroo.	<i>Anthistiria ciliata.</i>	December-April.	Indigenous fodder grass.
<i>Phalaridea</i>	Sweet vernal.	<i>Anthoxanthum odoratum.</i>		
<i>Agrostidea</i>	Timothy.	<i>Phleum pratense.</i>	November-March.	Fodder grass.
<i>Festuca</i>	Rat's tail.	<i>Sporobolus indicus.</i>	October.	Weed (indigenous).
<i>Hordea</i>	Soft brome.	<i>Lolium mollis.</i>	October.	Weed.
	Barley grass.	<i>Hordeum murinum.</i>	October.	Weed.
<i>Compositae:</i>				
<i>Inulea</i>	Dogweed.	<i>Cassinia</i> spp.		
	Western Australian everlasting.	<i>Helichrysum ferrugineum.</i>	August-September.	
		<i>Schenia cassintana.</i>		
		<i>Helichrysum laurcella.</i>		
<i>Rosaceae</i>	Hawthorn.	<i>Crataegus.</i>	October.	Cultivated.
	Rose.	<i>Rosa.</i>	September-February.	Cultivated.
<i>Chenopodiaceae:</i>	Goosefoot (lamb's quarters).	<i>Chenopodium album.</i>	} November-March.	Weed (common).
		<i>Chenopodium murale.</i>		
<i>Anacardiaceae</i>	Pepper tree.	<i>Schinus molle.</i>	November-April.	Cultivated.
<i>Oleaceae</i>	Privet.	<i>Ligustrum vulgare.</i>	November.	Hedge (common).
	Olive.	<i>Olea europea.</i>	November.	Cultivated.
<i>Leguminosae:</i>				
<i>Papilionaceae</i>	Sweet pea.	<i>Lathyrus odoratus.</i>	August.	Cultivated.
<i>Mimosae</i>	Wattle.	<i>Acacia dealbata.</i>	July-November.	
		Other species.		

Dock and sorrel which are included in the same genus, *Rumex*, of *Polygonaceæ*, frequently give reactions in the same individual.

These facts point to the probability of one allergen being common to a number of closely related plants. When the extent of such allergen groups is more fully known, both skin testing and specific treatment may be simplified. Further work along these lines is being carried out.

This idea has been opposed in America by Bernton⁽⁶⁾ and Rackemann,⁽⁷⁾ who have referred to the specific nature of allergens even within the same genus *Ambrosia* (ragweeds) and by Lamson and Alles⁽⁸⁾ in the genera *Artemisia* and *Atriplex*. None of these genera, however, is of importance as allergens in Australia.

Time of Pollinating.

Table IV has been prepared to show the pollinating season near Melbourne of most of the plants included in Tables II and III during 1927 and 1928. It indicates also the duration of the hay fever caused by these plants, as the hay fever season corresponds closely with the pollinating season.

This chart is necessarily a somewhat approximate guide, as variations of temperature and rainfall occur from year to year with corresponding variations in the duration of the flowering season. Pollination usually corresponds with the flowering period, but an outstanding exception is prairie grass. This grass will develop pollen in appreciable quantity only under optimum conditions of temperature and humidity. Some varieties of prairie grass and most early and late flowering prairie grass plants form cleistogamous or closed, self-fertilized flowers. In 1927 pollinating prairie grass was available only during portions of October and November and in 1928 chiefly during September and October, though flowers were developed each year for many months.

The chief hay fever grasses, rye, cocksfoot and prairie grass, are purely spring flowering grasses, though a wet summer may prolong their flowering season. When spring hay fever continues after hot, dry weather, plantain may be responsible for it, as this plant has a remarkably long flowering period. Paspalum and couch grass flower in summer and autumn so could not be causes of spring hay fever near Melbourne. Further north, however, where frosts are not common, they probably flower earlier. Although Kentucky blue has normally a short flowering season, it may be an important factor in causing hay fever because of its use as a lawn grass. Both Kentucky blue grass and rye grass, when cut and watered as in lawns, may flower over a long period. Winter grass, pine, wattle or Iceland poppy may be factors when hay fever commences in winter or early spring. Dahlia, cosmos and sunflower, as well as late flowering grasses, may cause hay fever in the autumn.

It is evident that pollen from one or more of the hay fever plants may be in the air all the

year round, making it possible for hay fever to occur at any season; but, because of the limiting factors—temperature, humidity of the air and velocity of the wind—the pollen content of the air is usually insufficient to precipitate hay fever or asthmatic attacks during the winter.

Records of the flowering seasons in New Zealand of hay fever plants of importance there have been published by Patterson⁽⁹⁾ and Allen.⁽¹⁰⁾

Summary.

1. A series of over two thousand prescriptions for extracts for treatment of hay fever and asthma issued by the Commonwealth Serum Laboratories has been analysed to find from the demand which substances appear to be the commonest causes.

2. Attention is drawn to the botanical relation between some of the hay fever causing plants and to the probable existence of the same allergen throughout certain plant groups.

3. In Table IV are given the months when various pollens may be in the air in the vicinity of Melbourne and when hay fever due to them may be expected.

Acknowledgements.

I have to thank the Director of the Commonwealth Serum Laboratories for making it possible for me to compile these notes, and Dr. C. Sutherland for his assistance and his permission to use the records of the Asthma Clinic at the Alfred Hospital.

I am indebted to Mr. F. Dempster for his assistance with the illustrations.

The botanical classification is according to that of J. C. Willis in "A Dictionary of Flowering Plants and Ferns," 1925.

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PURPURA OF THE URINARY TRACT.

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To be able to reclaim anything from that garbage heap, "essential hæmaturia," is worth the pains of pathological research. Of recent years two by-products have been recovered which are probably one and the same thing, though isolated by means of separate processes depending on whether the investigator were a surgeon or a physician. Neither seems to have mentioned the findings of the other, so I am not suggesting that there has been any altercation on the subject.

The former recognizes "purpura of the urinary tract" and the latter "acute hæmorrhagic nephritis." This so-called nephritis does not include such conditions of toxic nephritis caused by a fatal sepsis as is sometimes seen in *Bacillus welchii* infections, but merely a condition of gross hæmaturia without any defect in the renal function or indeed other signs of renal disease.

Frank Kidd in "Common Infections of the Urinary Tract" and in a more recent valuable contribution,⁽¹⁾ gave twenty-four undoubted cases of purpura and a long list has also been contributed by a number of other observers. A number of Kidd's cases was due to streptococcal infections of the throat, teeth and bowel, the same being frequently found in the kidney when excised and occasionally in the urine as well. When the streptococcus was not found in the urine, occasionally other organisms were found which might easily have overwhelmed the streptococcus in culture.

It would have been interesting to have imitated the experiments of Rosenov,⁽²⁾ Bumpus and Meisser⁽³⁾ at the Mayo Clinic by which the selective affinity of the *Streptococcus viridans*, set free from foci in the mouth, has been demonstrated in various conditions, such as cholecystitis, appendicitis, gastric and duodenal ulcer, renal calculus and even in *Bacillus coli communis* pyelitis (the *Bacillus coli communis* in the latter case being a secondary infection).

Such a possibility in the pathogenesis of essential hæmaturia was hinted at by Hale White in 1911.⁽⁴⁾ He concluded "in some people a poison is formed somewhere at intervals and this reaching the kidney by the blood damages the cells of the minute vessels so as to let blood through." He instanced the effect of bile on the capillaries, producing purpura, and even suggested a bacterium as the virus in question.

It is possible that from the Mayo Clinic we may yet hear of the purpuras being added to the casualty list of the streptococcal attacks.

From the recent works of Bedson⁽⁵⁾ and others it is practically certain that *purpura hæmorrhagica* as well as the more simple types of purpura are due to a double cause: (i) damage to the capillary endothelium by some toxin, allowing an excessive diapedesis and (ii) the manufacture by the bone marrow of immature platelets which the reticulo-

endothelial system as a whole and especially the spleen rapidly disposes of, produces a thrombocytopenia.

Acute Hæmorrhagic Nephritis.

A short description of acute hæmorrhagic nephritis by H. Letherby Tidy was given last year at the annual meeting of the British Medical Association, Cardiff, in which he briefly reviews a considerable literature of Continental and American authors, so that I have no need to append any bibliography on this subject. He states:

The outstanding and frequently sole immediate characteristic is the occurrence of gross renal hæmorrhage. Often this is related to infectious areas in and around the throat, otherwise there is no marked constant feature, many cases in adults pass into oblivion with the diagnosis of essential hæmaturia . . . the condition presents usually little or none of the features of a nephritis apart from the hæmorrhage . . . occasionally, though rarely, it runs a serious course . . . the literature contains practically no example where such cases have been followed deliberately to their end and the pathological process recorded . . . most commonly in children and young adults, though it may occur after the age of thirty.

No doubt the conditions of patients of more advanced years have been those which the urologists have been permitted to investigate and rescue from the collection of essential hæmaturias, and one can only surmise that, had they been given the opportunity in the early life of their patients, they would have prevented them from being labelled "acute hæmorrhagic nephritis."

Tidy also notes the frequency of tonsil and adenoid infection and many occurring in epidemics, especially following glandular fever. I myself can recall some cases following glandular fever; they cleared up before a diagnosis had been made and I was very thankful.

Tidy considers that such conditions are less frequently found in adults, "and these are those cases which are investigated surgically." He seems to infer that children have not been so investigated, namely by the cystoscope, but nevertheless he states that when the cystoscope is used, blood may be seen coming from one or both ureters. I should have thought that a unilateral hæmorrhage would have suggested anything but a nephritis.

I recently asked a senior physician in one of London's biggest institutions how he would diagnose cases he was demonstrating from purpura. The resting blood urea was normal and concentration tests good, no cystoscopy had been done and he confessed that he had not heard of a purpuric condition of the urinary tract except as a generalized condition.

The last named writer laments that the examples in children have no known pathology; they practically all clear up, though a few patients operated on by mistake have shown glomerular hæmorrhages, indicating "an increased permeability of the glomerular capillaries" and some long standing cases a chronic interstitial nephritis.

A very small proportion of the total goes on to a progressively fatal chronic nephritis. I humbly

suggest that Archer's urea tolerance test might have differentiated this small series at the time.

The surgeon has on the other hand had a better chance of studying the pathology in excised kidneys and by cystoscopic and pyelographic examination. As may be seen, at present I am inclined to side with the surgeon and ignore the so-called acute hæmorrhagic nephritis cases.

Purpura, then, of the urinary tract may involve any part or whole of the tract from the renal parenchyma to the bladder and may appear as small scattered petechiæ to large ecchymoses. The attacks may be simple, recurrent or fulminating. Kidd suggests that cases which are not of bacterial origin may be caused by a chemical poison, a thrombocytopænia, splenomegaly or the deprivation of some vitamin.

Purpura of the bladder only was first described by Walsh and Kidd, though Blum had no doubt recognized it independently. The latter ingeniously attributed it to an escape of pepsin from the stomach into the blood stream being held up in the capillaries of the urinary system, there to exercise its digestive action with the aid of the acid urine. His assistant, Hrynischak, admitted to me that they had abandoned this view, but still held to the alkali treatment which usually cleared up the bladder condition. If the patient was not treated by alkalis, rupture of the mucosa took place and ulceration. Kidd has, however, not seen any ulcers which he could attribute definitely to purpura, and most other observers agree with him.

The last mentioned described in 1910 purpura of a kidney removed at operation for a profuse hæmorrhage. Up to October, 1927, he had removed eight kidneys for intractable and profuse bleeding.

The condition affects females more often than males (nineteen to five) and in young children (six) it is "usually a mild type."

Pain is a prominent feature in all purpura of the bladder with intense strangury and frequency of micturition. When the bladder is not involved, however, hæmaturia may be symptomless, except when clots are forming in the renal pelvis. Then abdominal pain, vomiting, rigidity and hyperæsthesia of the renal area would be natural enough.

According to Kidd the blood does not usually show a tendency to clot, so that in nearly all his patients pain was absent.

Treatment.

In mild purpura, especially in children, anti-streptococcal serum by the mouth in doses of twenty-five cubic centimetres is said to be sufficient. Large doses of alkalis according to Blum are effective.

In all patients blood examination should be made, the clotting and bleeding times, the nature of the clot, platelet count and the static resistance test of Hess should be determined. In this way the various anæmias can be diagnosed and treated accordingly and the presence of the so-called idio-

pathic purpura noted, so that splenectomy may be kept in mind and performed if necessary.

It is questionable whether foci of sepsis should be dealt with at the time, on account of the probability of distributing the organisms, but in mild cases which are intractable, it seems reasonable to deal with them.

Other means are autoserotherapy, transfusion of homologous blood and protein shock therapy.

Splenectomy has been said to have proved successful when all the above signs of idiopathic purpura were not present and when there was no splenomegaly. To me it seems a less heroic measure than nephrectomy, when all means up to blood transfusion have failed.

Transfusion causes little or no increase in the platelets circulating in the recipient's blood and since one of the causes of the hæmorrhagic diathesis is the breaking down of the platelets in the spleen, it can only be of temporary assistance to the patient.

In the series quoted nephrectomy was performed eight times in twenty-four cases for fulminating hæmaturia, but probably the number would not be so high at the present day. Even in unilateral purpura of great severity I should hesitate a long while before doing a nephrectomy, unless the diagnosis of a tumour were in doubt, as the trouble may appear just as severely on the opposite side. Calcium does not seem to influence the bleeding, but parathyroid therapy might have a better effect.

The following is a case which I believe comes into the classification as a fulminating type:

A married woman, aged forty-four years, was sent to Dr. Stanley Verco for pyelogram and other necessary investigation by Dr. S. E. Holder to whom I am indebted for several facts in the history. I was called in to cooperate and on account of the unfavourable progress of the case came to be responsible for the subsequent management.

Five weeks previously she had commenced with severe pain of the nature of renal colic on the left side with considerable hæmaturia. This was soon relieved by morphine, but pain of a nagging character continued in the left loin, but without macroscopical blood. The symptoms suggested renal calculus.

A sudden recurrence of the same severe pain and blood occurred about a week before I saw her and disappeared just as suddenly as before without an opiate. There was no personal or family history of bleeding. The routine X ray examination revealed nothing abnormal, no stone and neither kidney nor splenic enlargement.

Cystoscopic examination showed that the bladder mucosa was normal, except for a crop of petechiæ around both ureters, more pronounced on the left side. These spots oozed blood when touched with the catheter. No turbulence was seen around the orifices. Effluxes on both sides appeared normal. There was no obstruction to catheterization of either ureter. No residual urine was present in either pelvis. There was no pain on injecting eight cubic centimetres of iodide into the left and six cubic centimetres into the right pelvis.

The pyelogram on the left side was perfectly normal, but the picture of the right pelvis was an unsatisfactory one. This did not concern us much, as the left side was the one under investigation. There was also no chance of repeating the examination on account of subsequent events.

Urine drawn off from the right and left ureters contained 1.5% and 1.4% urea respectively; gross blood was present in both specimens, much in the left, little in the

right. No other cells or organisms were detected in films or culture. An absence of organisms may be due to the formalin in the catheters, though I endeavour to obviate this by soaking them in water before passing them.

The same evening the patient had severe pain, now in the right side, which continued with vomiting at frequent intervals.

Seen two days later, the urine was black with blood, the temperature was 37.2° C. (99° F.), the pulse rate was 80 in the minute. The abdomen was rigid on the right side with superficial and deep hyperæsthesia. Appendicitis was suggested as a focus of sepsis, but the tenderness was more pronounced in the costo-vertebral angle and the hyperæsthesia followed the distribution of the twelfth dorsal and first lumbar nerves, even on to the buttocks, groin and labia.

The only area of sepsis noted was the teeth, a number of septic stumps being present.

The circulatory system was normal by the ordinary office routine, the systolic blood pressure being 120 and the diastolic pressure 70 millimetres of mercury. The eye-grounds were normal. The patient was ordered to hospital, the foot of the bed was raised and alkalis were pushed. Two cubic centimetres of "Hæmoplastin" were injected intramuscularly.

On the following day she had antistreptococcal serum thirty cubic centimetres by mouth (though I confess to little confidence in this route of administration), also ten cubic centimetres of 5% calcium chloride solution and thirty cubic centimetres of 20% of sodium citrate solution intramuscularly.

The next day a further thirty cubic centimetres of antistreptococcal serum were given by the mouth. No improvement followed any of these measures, but rather the bleeding became worse; a deposit of one-third to one-half of the contents of the specimen glass was blood *débris* and she had become obviously anæmic.

Cystoscopic examination on the sixth day after the pyelogram showed that the bladder apart from the ureteric orifices was the same as before. There was faint blood staining of the efflux from the left ureteric orifice, there were no petechiæ now surrounding this orifice. The right ureteric orifice manifested a diffuse encircling ecchymosis without any swelling. It was immobile, there was no periodic efflux, but a continuous stream of bright red blood, like dense smoke from a volcano. Indigo carmine was injected intravenously, but by that time the blood had ceased discharging and no blue or efflux of any kind was seen on the right side during twenty minutes' watching. Presumably a clot had blocked it temporarily. Blue appeared from the left orifice in five minutes. The next day, a suitable donor having been found, 540 cubic centimetres (eighteen ounces) of blood were transfused. After a slight reaction she was without pain and within twenty-four hours there was no macroscopical sign of blood nor any recurrence up to the end of six weeks at the time of writing.

I neglected the blood examination which I have recommended above, but I shall not do so next time and should certainly have carried it out if the transfusion had proved ineffective. I wished, however, that I had done so prior to the transfusion from a point of interest, as the blood drawn for testing with the donor's corpuscles showed two interesting characters. On being allowed to stand, the red corpuscles had settled to the bottom of the tube, indicating a delayed clotting time and the plasma had set like a jelly, there being no retraction of the clot at all. In fact very little serum was obtainable for the test. There was no spirit in the needle used to extract the blood, so that it is difficult to interpret this phenomenon as being due to anything other than a peculiarity of the blood itself.

Such a long delayed clotting time would, I know, be extraordinary for the hæmorrhagic diathesis, the time usually being only prolonged very slightly and only noted by very exact methods. Of course the test should have been repeated. The bleeding time which is much more important, was not much prolonged, as we had ample opportunity of noting.

The static resistance test of Hess was unconsciously performed on two occasions for the purpose of treatment, but no petechiæ resulted.

The latter two facts would then put the condition outside the diagnosis of the idiopathic type, the hæmorrhagic diathesis. The result of the transfusion also confirms this view. The platelets or corpuscles were not investigated.

The case is interesting from a diagnostic point of view and, though the petechiæ in the vicinity of the ureteric orifices may not to some prove the diagnosis, the possibility of a double ureteric calculus of an unusual nature, combined with a defect in the coagulation mechanism of the blood, being still kept in mind, still I offer no apology for considering the case in connexion with this subject.

Summary.

Many cases of essential hæmaturia are due to an undue permeability of the capillary endothelium, coupled sometimes with a defective clotting mechanism of the blood.

Whether this capillary defect is located in the glomerular capillaries or in the collecting part of the urinary tract, the condition might well be grouped with the purpuras.

The kidneys and ureters may alone be affected on one or both sides and the condition is then usually painless.

Vesical purpura is, however, painful.

Cystoscopic and pyelographic examination is a necessity in all patients with hæmaturia not manifesting definite parenchymatous nephritis.

A search for foci of sepsis and a thorough blood examination should be made when the diagnosis of purpura is being considered. Transfusion of blood succeeds when simpler methods fail to give rapid relief.

Splenectomy should be used when there is evidence of the hæmorrhagic diathesis.

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Reports of Cases.

HYDATID CYST OF THE PANCREAS.

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H.A., MALE, aged seventy-four, was admitted to hospital complaining of intermittent pains in the left hypochondrium associated with periodical attacks of nausea and an occasional attack of vomiting. His appetite was poor and he had lost 6.3 kilograms (one stone) in weight in eight months.

A hard mass was felt in the left hypochondrium extending also into the epigastric region.

Blood examination revealed 3,750,000 erythrocytes and 8,200 leucocytes per cubic millimetre. There was no increase in eosinophile cells. The Wassermann and the Kline tests yielded no reaction. The Casoni test gave no reaction. The specific gravity of the urine was 1030; it contained sugar.

X ray examination revealed a mass in the left hypochondrium behind the stomach, producing a deformity of the lesser curvature.

The abdomen was opened in the mid-line from the xiphisternum to the umbilicus. The gastro-colic omentum was incised and a mass seven by twelve centimetres was found embedded in the pancreas with a circular area three centimetres in diameter projecting into the omental bursa at the junction of the head and neck of the pancreas. There was also a projection to be felt beside the left crus of the diaphragm about the size of a walnut. The walls of the cyst were calcified in places. A firm adhesion to the posterior wall of the stomach was divided. The mass, shown in the accompanying illustration, was



Figure Showing Cyst Described by Dr. Gardiner.

removed. No evidence of hydatid elsewhere in the abdomen could be felt. A drain was inserted through the gastro-hepatic omentum and brought out through the upper angle of the wound. The opening in the gastro-colic omentum was closed and the wound was surrounded with paraffin. The tube drained for four days and then gradually drainage eased off. No sugar was found after the fourth day and the patient left hospital apparently well at the end of the third week.

Comment.

Most authorities state that the entire cyst should not be removed, but an experience with a hydatid cyst of the spleen two years ago persuaded me to try to remove it entire.

The patient, a male, aged seventy, had a hydatid cyst of the spleen with partly calcified walls. A large opening was made into the cyst which was about twenty centimetres in diameter and part of its wall only was removed, hard, calcareous portions of cyst wall being left level with the surface of the spleen. The patient's life after operation was one of misery. Apparently portion of the stomach would fall by its weight into the "calcareous hole" left, the pain being felt more on lying down and relieved by vomiting. He died from malignant disease of the stomach, the walls of the stomach being adherent to the splenic "calcareous hole" and the muscular wall in the cavity contained a fairly extensive malignant disease which was not present at his original operation.

I found the literature on hydatid of the pancreas rather scanty, only twenty-six cases being reported. The Australian writers Graham and Dew make only slight reference to hydatids of the pancreas. Graham⁽¹⁾ states:

Hydatid is sometimes met with in the pancreas. I have observed it as a cyst about three inches in diameter, replacing the head of this organ. The patient had also a suppurating hydatid of the liver causing obstructive jaundice. The hydatid in the pancreas was not diagnosed during the life of the patient. The liver cyst had suppurated and caused the death of its host. The presence of other cysts in the peritoneal cavity is commonly met with in those cases where hydatids in the pancreas have been found.

Dew⁽²⁾ states that cysts have been recorded in the pancreas by Graham, Albo, Phillips, Peters and Ashton, but records no case found in Australia.

Undoubtedly the best article on hydatids of the pancreas has been written by Albo,⁽³⁾ of Montevideo, and translated to English by Meeker. A *précis* of this is presented.

Meisser in 983 hydatid infestations found no cysts of the pancreas. Feichman among 2,452 found only three. Vegas and Cramwell in 970 cases from 1875 to 1900 mention none of pancreatic localization. Graglietto gives an incidence of 0.12% as compared with 42% in the liver.

In 375 cases from the statistics of the hospitals of Montevideo from 1908 to 1912 there were no cases of pancreatic involvement. After dealing with the aetiology, pathology and evolution of the cyst, Albo goes on to describe the pathological anatomy.

The development of the parasite within the gland provokes reaction in the surrounding tissue resulting in the formation of a fibrous envelope, usually of finer texture than that which develops in the lung and liver.

There are according to Chutro no signs of sclerosis or congestion of glandular tissue to microscopical examination. Even though such changes might be produced, they are certainly not pronounced, so that no deficit of glandular function is felt except when there is compression of the ducts. On the other hand, when the tumour is implanted in the gland in a superficial position, its position becomes subserous and the vascularity of the omenta and mesenteries is increased often to an extent that would make its extirpation seem dangerous to most surgeons. There is often retraction of the lesser omentum and adhesion to the stomach, colon and liver. Adhesions to the abdominal wall are found only in the last stages of development. The hydatid cyst continues growing in most instances until evident tumefaction is produced. In other cases the phenomena of canalicular compression (Wirsung and Santorini) play a more important part. These trains of symptoms are largely dependent upon the position. Hydatids situated in the head of the pancreas and in front of the ducts cause compression very late, while those located within the ducts or behind the duct of Wirsung, produce phenomena very early.

As regards symptomatology he divides hydatid cysts of the pancreas into three groups according to the pathological anatomy as follows: (i) Those which develop in a latent or almost latent manner so that they give a symptomatology of palpable or appreciable tumour; (ii) those which develop rapidly producing symptoms resembling those of cancer of the bile ducts or head of the pancreas; (iii) those that produce symptoms resembling those of retroperitoneal tumours.

After discussing diagnosis he states *inter alia* of treatment that no satisfactory antiparasitic drug is known;

"Salvarsan" and "Novarsenobillon" which have been recommended by some authorities, seem to possess no particular value.

In operating the incision should be so made that it will give the easiest delivery of the tumour, median or lateral, according to the particular case. The Bevan incision applied to the left side, as proposed by Mayo and Balfour for extirpation of the spleen, would be indicated in a cyst of the tail of the pancreas. Recognition of the tumour is not always easy. Extirpation of the tumour is usually not advisable. Evacuating puncture with the appropriate trocar should be followed by the injection of parasiticidal liquid. He employs a 2% solution of pure formaldehyde in water or the injection of pure formaldehyde in a quantity proportional to the volume of the cyst.

After the proligerous membrane and daughter cysts have been removed, one should proceed to dry the cavity with gauzes soaked in ether, containing some antiseptic substance after the method of Dévé. In his experience it is best to close the cysts if the content is clear, unless the cyst is very large or in case it is necessary to resect the pericystic tissue followed by hæmostatic closure.

To prevent a possible hydatid intoxication which happens more frequently than most authors will admit, he injects one cubic centimetre of one in a thousand synthetic adrenalin (Parke, Davis and Company) during operation, also during the following days, if tachycardia and dyspnoea accompanied by oliguria persist. The action of this drug in the prevention of shock has been well demonstrated in other abdominal operations.

Discontinuous instillation of Carrel's fluid should be employed if the microbic conditions of the infection indicate it.

As complementary operations cholecystostomy may be indicated when icterus is very pronounced and there are indications for rapid drainage of bile. There may be indications for gastro-enterostomy in cases of duodenal compression.

References.

- (1) T. Graham: "Hydatid Disease," 1891, page 128.
- (2) H. R. Dew: "Hydatid Disease," 1928, page 406.
- (3) M. Albo: "Hydatid Cysts of the Pancreas," *Surgery, Gynecology and Obstetrics*, June, 1922, page 739.

Reviews.

RHEUMATIC CONDITIONS.

UNDER the title of "Arthritis and Rheumatoid Conditions, Their Nature and Treatment" Dr. Ralph Pemberton has given a very complete account of the present day knowledge of this perplexing disease and its treatment.¹ While the most recent observations and researches of workers in this field from all parts of the world are reviewed and evaluated, the greatest interest naturally attaches to the investigations carried out by the author himself and his associates in the work, F. A. Cajori, Ph.D. and Dr. E. G. Pierce.

The series of observations recorded into the defective flow in the capillary circulation in the joints, muscles and fibrous tissues involved in this disease, serve to explain much of the obscure pathology. At the same time they clarify our ideas as to why the various measures which tend to quicken the local capillary flow, do so much good.

The discovery that the glucose content of the synovial fluid so immediately responds to variations in the blood sugar, while of extreme interest in itself, has a striking further application in that it suggests that this fluid, apt to be regarded as of more or less constant composition, may be equally readily affected by poisonous substances in the circulation, particularly perhaps by toxins absorbed from the intestinal tract.

¹"Arthritis and Rheumatoid Conditions: Their Nature and Treatment," by Ralph Pemberton, M.S., M.D.; 1929. Lea and Febiger. Royal 8vo., pp. 354, with illustrations. Price: \$5.00 net.

While stressing the importance of thorough search for focal sepsis and its treatment in all forms of arthritis, Dr. Pemberton is careful to point out that it is not yet known how the sepsis acts and that it is at the best only one of the factors. He strongly deprecates the carrying out of surgical measures unless there is definite evidence that a condition calling for surgical interference is quite obviously present.

It is, we think, unfortunate that when classifying his army patients, the author did not amplify his statement that among those with septic foci untreated there was a larger percentage of complete recoveries than among those in whom treatment of such foci was carried out. This is liable to be misunderstood by those who have not realized that a very large number of those coming under treatment for well established *arthritis deformans* and showing focal infections, give a history of at least one earlier attack from which a complete recovery was made, often with little or no medical assistance. Obviously, in an army of picked young men many would have such initial attacks under medical observation and would recover before the local infection was treated.

In the section devoted to treatment much stress is laid on a general reduction of the fuel consumption of the gross feeders, especially in regard to reduction of carbohydrates and a number of convincing illustrations of the value of this low caloric diet is quoted.

It is to be hoped that, instead of bringing discredit on a new line of treatment by using it for unsuitable patients, readers of this volume will mark, learn and inwardly digest Dr. Pemberton's repeated warning that these dietetic measures are only of value in selected cases.

THE INJECTION OF VARICOSE VEINS.

J. D. P. McLATCHIE'S book on the treatment of varicose veins by intravenous injections contains much of interest, particularly to those who are familiar with the treatment.¹ The history is well treated, whilst the chapter on preparation and dosage of the various chemical substances is of more than usual interest, particularly concerning the confusion which has arisen in regard to the composition of Gênévri's solution. Gênévri advocated the use of bihydrochloride of quinine, but apparently in the process of translation most English authors have given this as the hydrochloride. The former is soluble whilst the hydrochloride crystallizes out at ordinary temperatures. It would appear, however, that there is but little difference in the clinical effects.

Varicose ulcer receives only passing mention and in the chapter on technique the author agrees in the main with most other writers. Mr. Powell, the Librarian of the Royal Society of Medicine, has assisted in compiling the bibliography which extends over eleven pages and is the most complete yet published.

This book is particularly suited to the practitioner who has had experience of this method of treatment rather than to the beginner. It contains much interesting information.

PROGRESS IN MEDICINE.

THE "Medical Annual" for 1929 is well up to the standard of this publication in previous years.² Medical practitioners should not require an introduction to it. They will find in its pages a clear statement of recent advances in almost every sphere of medical endeavour. Among those mentioned most prominently are radio-therapy, "Avertin," ovarian hormones, suppurative arthritis, sympathectomy, surgery of the nervous system, pernicious anæmia and mental diseases.

¹"The Treatment of Varicose Veins by Intravenous Injections," by J. D. P. McLatchie, M.D., C.M.; 1928. London: William Heinemann (Medical Books) Limited. Crown 8vo., pp. 58. Price: 3s. 6d. net.

²"The Medical Annual: A Year Book of Treatment and Practitioner's Index," by various contributors; 1929. Bristol: John Wright and Sons, Limited. Demy, 8vo., pp. 611, with illustrations. Price: 20s. net.

The Medical Journal of Australia

SATURDAY, OCTOBER 26, 1929.

The Congress.

IN 1927, after the second session of the Australasian Medical Congress (British Medical Association) at Dunedin, we called attention to a proposal made by Dr. D. W. Carmalt Jones, the Honorary Treasurer, that the preparation for future sessions should be begun six years in advance in order that investigations into specially selected subjects might be carried out with deliberation and coordinated effort. He suggested that the invitations to hold sessions of the Congress should be addressed to the Federal Committee six years ahead. As soon as the invitation was accepted, the inviting Branch would appoint its executive committee and set to work to select the subjects for consideration and would approach the most competent people available to carry out the investigations. Dr. Carmalt Jones further thought that steps should be taken to induce every member of the inviting Branch to enrol as members. To meet the added expense of having to coordinate research, the organizers of the session should require the members of the inviting Branch to contribute one guinea each year for three years. According to the scheme, the third guinea was to be ear-marked for the investigational work. We desire to remind the medical profession of this scheme and to ask it to give it careful consideration as a practical proposal to overcome some of the inherent defects of all recurring conferences and congresses at the present time.

The third session of the Congress which was held in Sydney during the first week of September, has been a great success. The scientific work presented was of good quality and of immense volume. As can be seen from the summary that appeared in THE MEDICAL JOURNAL OF AUSTRALIA of October 5, 12 and 19, 1929, the majority of the fifteen sections sat twice a day and considered very many subjects.

This summary has occupied a very large amount of space. For the first time in Australasia there was a section devoted to the problems of anaesthesia. The work carried out in this section has been interesting and instructive and the innovation has justified the action of those who proposed its formation. The heavy responsibilities and difficult tasks of organizing so great a gathering have been in safe hands. The actual work as is inevitable was accomplished by the two genial honorary secretaries, Dr. T. W. Lipscomb and Dr. A. A. Palmer. They organized the session in an excellent manner and displayed ingenuity and resource in their achievement. They exercised wisdom in seeking the aid of their incomparable colleague, Dr. R. H. Todd, on many occasions and they were fortunate in having the valuable assistance of Dr. Todd's office staff. The President, Dr. G. H. Abbott, notwithstanding the fact that he was not appointed to his office until April, 1929, has contributed not a little to the success of the Congress. The honorary secretaries of the several sections and of the museum should also be remembered in connexion with the work of organization.

The *raison d'être* of a medical congress is the presentation of new scientific work, the discussion of scientific problems awaiting solution and the awakening of interest in recent scientific discoveries. The social side of the meetings is important in that it enables those who live far apart and have little opportunity of meeting, to discuss matters of common interest and to exchange opinions and experiences on medical subjects. In other words, a medical congress should be regarded as one form of post-graduate machinery. It differs from the ordinary post-graduate courses in that every participant can appear as a teacher or critic. The third session of the Australasian Medical Congress (British Medical Association) has received a particular distinction by the presence of Sir Ewen Maclean, the immediate past President of the British Medical Association, who attended as the official delegate of the association. Sir Ewen Maclean took an active part in the deliberations and enhanced the value of the meeting by his erudite and measured

utterances. In many of his speeches he manifested his keen interest in the development of post-graduate work. Others will share with him the view that the Congress may be used as a starting point for a considerable extension of the post-graduate teaching within the Empire.

The end of one session of Congress means the starting of another. Whether the proposals of Dr. Carmalt Jones be adopted or not, steps will be taken in the near future to fix the time and place for the next session. It is understood that the Western Australian Branch is prepared to organize a session at a convenient time. An invitation will probably be issued by the Tasmanian Branch as well as by the South Australian Branch. If the interval of three years be continued, the time for the next session would coincide with the centenary celebrations of the British Medical Association in London in September, 1932. The Medical Secretary, Dr. Alfred Cox, had appealed to the Federal Committee to avoid a date that would prevent members of the Branches in Australia and New Zealand from visiting London for this important function. If the next session were held in Perth a clear month before the centenary celebrations, those who could spare the time to travel to London for this purpose, could interrupt their journey in Perth and thus insure the success of the fourth session. It may be pointed out that no medical congress has yet been held in Western Australia. The opportunity, therefore, seems to be given to the States in the east to make light of miles and to demonstrate to the medical profession in Western Australia their faith in its ability to organize a valuable scientific meeting after two and a half years' preparation.

Current Comment.

TERATOMATA.

TERATOMATA may be described as tumour-like masses, composed of a variety of tissues, obviously due to abnormality in the process of development. They are different from malignant tumours in that they do not possess the power of proliferation, though occasionally malignant change may occur in a teratoma. It is commonly stated in text books that it is advisable to restrict the term teratoma to

those masses of tissue in which the three embryonic layers are represented. G. W. de P. Nicholson has recently made an interesting study of teratomata.¹ He has described in detail an example of these tumours and has discussed their essential nature. He quotes Fisher in regard to the factor necessary for the production of a tumour. There are the necessary though not essential factors which prepare for the event and often replace each other; they are called the unessential factors. The factors of realization are those which are essential for the determination of the event in time though not in kind. The factors of determination are those which are essential for the determination of the specific kind of the event.

The teratoma described by Nicholson was found in the body of an infant, aged four months. It was large, unilocular and retroperitoneally placed. The right kidney and suprarenal body were normal in every way. The relation of the tumour to the left kidney is important, for it has much to do with Nicholson's subsequent argument. The left kidney was attached to the left edge of the teratomatous cyst by its upper pole, it measured 5.5 centimetres in length. Section of the organ showed that it was deeply concave on its mesial surface where it was moulded on to the cyst; above it tapered to a point. Five pyramids were present. The upper of these was flattened and applied to the cyst, the lower four were normal; they were separated from the cyst by the renal pelvis. Projecting above the surface of the posterior wall of the cyst was a nodule, measuring 3.2 by 3.4 by 3.0 centimetres, which fused with the cyst wall but did not project into the cavity. Its middle point was separated from the hilum of the left kidney by a distance of ten centimetres. On histological examination it was found to consist of organ-like glandular lobules and small cystic spaces which represented a malformed, but readily identifiable true permanent kidney or metanephros. Nicholson points out that this nodule was clearly not a haphazard collection of renal tissues, but a malformed organ. He also shows that the left kidney was not perfectly normal owing to its pyramids being reduced in number to five. There were neither retention cysts nor signs of fibrosis at its apex; the reduction was not the result of pressure atrophy, but of the absence of from three to five cranial reniculi. The absence of these reniculi is in Nicholson's opinion accounted for by the metanephric lobules in the nodule. He holds that this nodule, in other words, this permanent kidney of the teratoma, was not of its own tissues, but that it was incorporated with them at an early stage of development and represents the missing cranial reniculi of the left kidney of the host.

As already mentioned it is commonly held that teratomata proper are composed of tissues that represent the three germinal layers and in accounts of teratomata in the literature efforts are repeatedly made to identify portions of the growth with parts

¹ *The Journal of Pathology and Bacteriology*, July, 1929.

of the adult body, for example, the eye, the mouth, the jaw and so forth. Nicholson states that it is surprisingly difficult to establish the view of the representation of the three layers, more particularly because but few somatic tissues are truly specific for one layer only. Contrary to what is generally stated, he finds it extremely difficult to identify the mesoderm with certainty as distinct from mesenchyme. The metanephros, the nodule previously described, is the only instance in which he has done this to his entire satisfaction, if testicular teratomata and carcinomata are excepted. Since he holds that the nodule was not really part of the original teratomatous tissues, it must be concluded that he has not succeeded in any instance in this discrimination. He states that there is no acceptable evidence in the literature of a kidney occurring in a teratoma. The only reason which he can find offered in the literature for the absence of excretory organs is that the function of excretion is performed by the host. He points out that this statement is true of the embryo and he asks why nearly all the bodily organs should be developed in the embryo since the placental circulation is more than competent to serve all these needs. He then argues as follows. The same tissues are present in the embryo and in teratomata. The former is an independent organism; the latter are parts of their hosts and not even aborted individuals. The one will need its organs at a future date, the others never. The means to an end that appears to be so clearly foreseen and met in ontogeny, are found to lead nowhere in teratomata; for in order to be consistent it is necessary to assume the action of the same principle in both. The question of importance in Nicholson's opinion is whether the development of every new individual is the expression of the cast iron constitution of the ovum alone or whether it is, in part at least, a new experiment. Nicholson's main conclusion is that teratomata are not homologous with the embryo; they possess none of the characters essential for independent existence; there is no evidence of membranes, of delamination of primary layers, of metameric segmentation in ordinary cases at least, nor of regional segregation. Since these together produce the human body, teratomata have no soma in the strict sense; they are malformations, yet they contain nearly all somatic tissues.

The subject as presented by Nicholson opens up several avenues for discussion. First of all there is the question of the interpretation of teratomata as representing certain organs or regions of a human embryo. If teratomata were homologous with an embryo, it would not only be probable that organs or regions would be represented, but it would be justifiable to attempt to discover evidence of regional differentiation. Nicholson is at considerable pains to show that the imagination is often strained by attempts to discover jaws or eyes or mouths in teratomatous structures. Thus he points out that the so-called jaws of dermoids are to be referred to tissue correlation; to the physiological

reaction of the mesenchyme by bone formation around enamel organs. He points out that they are not true jaws and the so-called mouth in which they are contained, is not a stomadæum, because among other reasons the teeth occasionally replace the hairy "scalp" of a dermoid nipple by projecting freely into its amniotic cavity. The so-called jaw thus becomes a cranium as well. Nicholson is not the only one who has warned observers against the frequent identification of embryonal derivatives and organ rudiments in teratomata. Others including Borst have done the same. The reverse proposition from that already stated may be made, that if it can be shown that regional differentiation does not as a rule exist in teratomata, this is an argument against the teratomata being regarded as a homologue of the embryo. It is justifiable to conclude that in the majority of instances there is no justification for regarding portions of these tumours as representing parts of a second embryo.

These are questions of interpretation and not of essential nature. It is the latter which matters. The developing cell of the animal body undergoes changes which are the result in the first place of qualities inherited from its ancestors and in the second place of its immediate surroundings. The stimuli, for it must be presumed that stimuli are operative whether they arise within the cell or outside it, act in a regular fashion, unless something occurs to interfere with them. The stimulus may be absent or another and more powerful stimulus may make its appearance and overshadow the action of the first stimulus. The result on the developing cell will depend on the stage of development which the cell has reached when the alteration in stimulus has occurred. If it be presumed that a cell which should develop along certain lines, remains in a quiescent condition, the quiescence will be the result of a failure of stimulus within itself or the result of alteration in stimulation from outside. When something happens which causes the cell to begin growing later on, it will be in a strange environment, for the cells in the immediate neighbourhood will have progressed and become differentiated while it has been lying dormant. Environment will then have an effect as well as the access of a fresh stimulus or the removal of the stimulus which previously caused its quiescent state to occur. If the initial interference with the cell occurs at a very early stage, the final structure will contain representatives of all three embryonic layers. If the incidence of the stimulus in point of time as well as of severity be considered, it will be possible to regard such conditions as parasitic foetus, foetal inclusions, teratomata, complex dermoids, certain mixed tumours, simple dermoids and epidermoids as being essentially of the same nature. Of course, we are in complete ignorance of the essence of the process known as life and in view of what has been stated there will be no quarrel with Nicholson in his contention that teratomata are pathological manifestations of physiological growth.

Abstracts from Current Medical Literature.

GYNÆCOLOGY.

Hydatid Infection of the Female Pelvis.

D. MALUSCHEW (*Monatsschrift für Geburtshilfe und Gynäkologie*, February, 1929) states that in eleven cases of echinococcal infection in women the site of infection in three instances was the soft parts of the pelvis. In one case the cyst was formed in the right parametrial tissues in a woman, aged fifty-eight. The removal of the cyst also required hysterectomy and death occurred early in convalescence from cardiac failure. The second case was noted in a virgin, aged twenty. The original diagnosis was a multilocular ovarian cyst and the real cause was discovered at the operation. Both ureters were involved in the cyst wall and had to be implanted in the bladder wall. One year later the pelvis was clear, but an hydatid cyst of the spleen was palpable. His third case occurred in a multipara, aged thirty-nine, and near the end of pregnancy. Severe pain in the back and lower part of the abdomen caused her to seek advice. A soft cystic swelling was felt in the pouch of Douglas, displacing the cervix above the symphysis pubis. Ovarian cyst was diagnosed and laparotomy performed. The child was removed by Cæsarean section and the hydatid cyst was found to be firmly adherent both to the rectum and uterus. He states that there are only five cases of hydatid cyst recorded in which Cæsarean section was necessary.

Practical Value of Ovarian Extracts.

R. VON JASCHKE (*Deutsche Medizinische Wochenschrift*, February 22, 1929) discusses the value of the newer preparations of ovarian hormones. By the use of the Allen-Doisy mouse unit much larger and more accurate doses have been employed with corresponding better results. Excellent results have followed their use for the treatment of patients with secondary amenorrhœa or scanty menstruation. The majority of such patients presents a history of ovarian hypofunction and in a small percentage the thyroid is also involved. Before ovarian extracts are administered, the uterus should be curetted because this acts as an ovarian stimulant. Only when there are definite signs of myxedema, is thyroid extract added. Another group comprises patients suffering from sterility due to underdevelopment of the uterus and associated with scanty, irregular periods. The same combination of curettage and use of ovarian extracts is given with the addition of diathermy. Much less success follows organotherapy in primary amenorrhœa due to a definite degree of infantilism of the generative tract. Possibly larger doses combined with pituitary gland extract may give

better results. In the treatment of the symptoms following the premature or surgical menopause complete success follows the oral administration of ovarian extracts.

Treatment of Uterine Myomata.

L. A. KRIWISKY (*Monatsschrift für Geburtshilfe und Gynäkologie*, February, 1929) has reviewed in detail the progress in treatment and the results obtained in the treatment of fibroids. In particular he has analysed his own results with radiotherapy as compared with former operation in all cases. Radium treatment is to be preferred for all uncomplicated myomata, especially interstitial myomata, provided that the size of the tumour is not more than that of a four months' pregnancy. It is also indicated in severe anæmia, when owing to some general disease, operation is contraindicated; it should also be used in patients with a high blood pressure. On the other hand, if the tumour be large or pedunculated, especially if symptoms of torsion occur, when malignant disease is suspected or any degenerative changes have taken place in the tumour and in the presence of inflammatory adnexal disease, operation is essential. He is of opinion that the scope for radiotherapy is being rapidly enlarged and the technique is becoming more perfect.

Infected Endometrial Cysts of the Ovaries.

JOHN A. SAMPSON (*American Journal of Obstetrics and Gynecology*, July, 1929) has reported three cases of infected endometrial cysts of the ovaries, two of which were bilateral. In the first patient endometrial cysts were present in both ovaries. The cysts were infected with a Gram-negative bacillus having many of the cultural features of those of the paratyphoid group. A similar organism was obtained from the urine. The bacteria apparently reached the cysts through the blood stream, the primary source of the infection was not ascertained. In the second patient endometrial cysts were also present in both ovaries. Cultures failed to yield any growth, but a Gram-positive coccus, growing singly, in pairs and in short chains, was found in smears from the contents of the cyst as well as in sections stained by the Gram-Weigert method. The abdominal wound became infected with a similar organism which also failed to grow in culture media. As in the previous case, the bacteria apparently reached the cysts through the blood stream. The primary source of the infection was not ascertained. In the third patient a large endometrial cyst of the left ovary, filled with foul-smelling, purulent bloody fluid was present. The cysts were fused with the sigmoid. Cultures and smears were not made. Gram-negative bacilli were found in the purulent exudate of stained sections of the cyst wall. Circumstantial evidence indicated that the cysts became infected from the

sigmoid, but the induration present in the portion of the wall of the intestine, fused with that of the cyst, might have been due to the extensive endometriosis which was present in the posterior cul-de-sac. This cyst also might have been infected through the blood stream. These three cases with five infected endometrial cysts are too few in number from which to draw conclusions, but they suggest that endometrial cysts of the ovaries may readily become infected. Their bloody contents often containing bits of necrotic material, the association of trauma with their reaction to menstruation, the fact that an epithelial lining is often lacking in portions of the cyst (especially the larger ones) thus lessening the protection of their contents, all predispose to their infection from bacteria invading the cyst through any channel and especially the blood stream. In addition, the incidence of perforation of their walls might lead to bacteria reaching their contents from infection in the pelvis.

Carcinoma of the Fundus of the Uterus.

LEDA J. STACY (*Surgery, Gynecology and Obstetrics*, July, 1929) concludes from a study of three hundred and six histories that, although carcinoma of the fundus of the uterus occurs most commonly after the menopause, it is rarely found in women less than forty-five years of age. It occurred in women under forty-five in 10.5% of those in the series reported. Metrorrhagia was the most common symptom and was the first symptom noted by 63.6% of the patients. Uterine myoma occurs more than three times as often in women with as in women without carcinoma of the fundus of the uterus. The symptoms may be attributed to the myoma and may cause a delay in the making of a diagnosis of malignant disease. Every patient having metrorrhagia and abnormal vaginal discharge should be examined thoroughly, to determine the cause of symptoms, irrespective of age. If the symptoms warrant it and the patient is in satisfactory condition, hysterectomy should be done, even if malignant disease is not found by curettage. The greatest number of the patients who died following operation for carcinoma of the fundus, died during the first three years of local recurrence. Arrest of growth over a five-year period results more often from operation for carcinoma of the fundus of the uterus than from operation for carcinoma in other commonly affected organs.

Myoma Malignum.

BERNARD F. SCHREINER (*Surgery, Gynecology and Obstetrics*, June, 1929) has examined a series of 1,205 tumours of the uterus occurring in patients whom he has treated during a period of fourteen years, 1914 to 1929. Eight hundred and forty-five were epitheliomata of the cervix, 41 were adenocarcinomata of the cervical canal, 121 were adenocarcinomata of the fundus

of the uterus, one was epithelioma of the fundus of the uterus, 197 were leiomyoma (fibroids) and eight were malignant fibroids. Malignant fibroids of the uterus were found in conjunction with 0.6% of all uterine tumours examined. Of the eight patients, one is clinically well after four years and nine months. In this instance radiation treatment was used one month after operation. The results in the other seven patients have been poor. *Myoma malignum* causes death by direct extension and by metastases. All fibroids should be examined microscopically and if a suspicion of malignancy is found, such patients should be immediately subjected to post-operative irradiation.

OBSTETRICS.

Natal and Neo-natal Mortality.

W. KLIMKE (*Klinische Wochenschrift*, February 19, 1929) has analysed the cause of death in 1,111 autopsies of still-births and neo-natal deaths. Congenital syphilis was noted in eighty instances and the percentage has been steadily declining annually. Malformations accounted for 6% and birth injuries for 14% in the list. Complications associated with maternal and fetal conditions were responsible for 29.6% of the deaths. Congenital debility occurred in 22% and comprised all deaths in which prematurity played an important part. An equal percentage was responsible for unknown causes. *Pneumonia neonatorum* was noted in fifteen instances. In addition in eighty-five still-births and in thirty-four neo-natal deaths signs of aspiration pneumonia were present. He considers that this cause of death has not been sufficiently recognized in the past. There were six cases of general oedema of the fetus for which no cause could be discovered; none of the mothers concerned had syphilis or nephritis.

Treatment of Abortion.

H. MARTIUS (*Deutsche Medizinische Wochenschrift*, March 15, 1929) considers that the frequency of abortion as compared with pregnancy at term has risen within recent years in Germany from one in six to one in two. The percentage of spontaneous abortion is probably only 10% of the total. In the uncomplicated afebrile abortion he favours curettage, as the uterus is seldom emptied by its own efforts and such interference will prevent much unnecessary pain and hæmorrhage for the patient. Similar treatment is recommended for uncomplicated febrile abortion, provided the os admits one finger. All patients who require dilatation of the cervix should be treated in hospital. Expectant treatment is absolutely essential for all those in whom the infection has spread beyond the uterus, curettage being performed only for severe hæmorrhage. For abortions up to nine weeks he uses either tents before inserting Hegar's dilators in the presence

of rigid cervix or else dilators up to number 14 Hegar. In some instances plugging the cervix with gauze and the use of quinine and pituitary extract are sufficient to produce expulsion of the ovum. The uterine cavity is then lightly curetted with a blunt instrument. He does not favour digital removal of the uterine contents, as the finger is not equal to a carefully guarded instrument and more squeezing of the uterus occurs in expelling the ovum. The main point insisted upon is adequate dilatation of the cervix and the taking time to do this. When this is done, the risks of perforation are not great. In all abortions of over nine weeks and especially in patients four months or more pregnant curettage should never be adopted. Quinine and pituitary extract will generally assist in delivery of the fetus and placenta, while the blunt curette may be used to remove fragments after the third stage is ended.

Blood Transfusion in Obstetrics.

K. HEIM (*Monatsschrift für Geburtshilfe und Gynäkologie*, March, 1929) gives an exhaustive critical survey of the theories advanced regarding blood grouping and discusses the indications for transfusion in obstetrics and gynecology. He prefers the method of Beck for establishing the group to which a donor belongs. In Germany the citrate method of transfusion is not largely employed. The usual method is the use of syringes to introduce blood direct into the recipient from the donor. The treatment of severe anæmia due to hæmorrhage has been carried out also by repeated intramuscular injections of ten to twenty cubic centimetres of blood or by rectal injections of blood and saline solution. However, for urgent conditions blood transfusion is essential. Blood transfusion for puerperal sepsis gives on the whole disappointing results. Similarly in eclampsia when venesection followed by transfusion is performed, the results have not been satisfactory. In the treatment of ruptured ectopic pregnancy autotransfusion of the free blood in the peritoneal cavity, mixed with saline solution in the proportion three to two, is indicated, care being taken not to include old clots from tubal abortion. The absolute indications for its use occur in obstetric practice—*placenta prævia*, rupture of the uterus and atony. Further knowledge concerning iso-agglutination and its effect is required before the whole subject can be placed on a firm scientific basis.

Fibroids During Pregnancy and Labour.

L. BUBLETSCHENKO (*Monatsschrift für Geburtshilfe und Gynäkologie*, March, 1929) presents an exhaustive analysis of the effect of fibroids on labour and the puerperium. In his opinion abortion and premature labour do not occur more frequently than normally. Large growths tend to cause abortion more frequently than

small ones. Labour with a fibroid uterus is generally shorter than under normal conditions contrary to the usual belief. On the other hand, the number of complications requiring interference is greater. Retention of the placenta, hæmorrhage and manual removal are common. As the result of the necessary manipulations associated with these conditions the puerperium is generally febrile, due to septic infection of the growths. In a series of seventy-four patients there were two deaths, while the morbidity was 28.4% for the remainder. It is impossible to find any correlation between the size of the tumour and complications during the puerperium. Involvement in all cases is slow. Interference with the blood supply of the growths is common and is diagnosed by tenderness on abdominal palpation. It usually appears on the second day or at the latest by the fifth and remains for one or two weeks often without any further signs of necrosis. The author is opposed to myomectomy during pregnancy because of the risk of abortion and the possibility of rupture of the uterine scar during labour. However, complications may arise during pregnancy and require operation; these are torsion of the pedicle, necrosis and suppuration or gross enlargement with pressure signs. In suitable cases Cæsarean section combined with myomectomy is the operation of choice, although if the tumours be multiple, hysterectomy is indicated. Infection during the puerperium is a severe complication and generally requires radical removal of the uterus.

Medico-Legal Aspects of Eclampsia.

K. KUNZ (*Münchener Medizinische Wochenschrift*, February 1, 1929) discusses the forensic aspects of eclampsia, as illustrated by a patient recently seen by him. A single woman near term was assaulted, being kicked in the abdomen and hit on the head. Despite a severe headache, she was able to continue work for several hours. Eclamptic fits then developed and she was delivered by Cæsarean section. Death occurred within twenty-four hours, due to respiratory failure. At the autopsy there was definite hæmorrhagic infiltration of the abdominal walls and free blood was present in the peritoneal cavity, cerebral hæmorrhage and the characteristic renal and hepatic changes noted with eclampsia were also found. No abdominal hæmorrhage had been noted at the time of operation, while the renal changes could not have developed within twenty-four hours. The patient had not been under medical supervision during her pregnancy. The author agrees with those who state that the onset of fits is not a "bolt from the blue," but is always preceded by some signs of toxæmia. Therefore he gave evidence that the lesions in this patient were the natural result of the eclampsia and were not caused by the assault on the previous day.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Medical Society Hall, East Melbourne, on June 5, 1929, Mr. B. T. ZWAR, the President, in the chair.

Surgery Abroad.

MR. BASIL KILVINGTON read a paper entitled: "Some Surgical Impressions Abroad" (see page 601).

Gynaecology and Obstetrics Abroad.

DR. EDWARD R. WHITE read a paper entitled: "Recent Notes on Gynaecology and Obstetrics Abroad." He said that as he had visited the United States of America first, he would mention St. Louis, where was situated the University of Washington Medical School and Barnes Hospital. Here Dr. H. S. Crossen was Professor of Gynaecology, with Dr. Newell and Dr. O'Keefe as assistants. Their work, of course, was already familiar through Crossen's very fine text books. In carcinoma of the cervix Crossen was using radium in place of surgery. Professor O. Schwarz was in charge of the beautiful new obstetrical wing of Barnes Hospital. In the toxæmias of pregnancy, intramuscular injections of magnesium sulphate were given and also very large intravenous injections of 20% solution of glucose and saline solution. In severe puerperal sepsis they relied upon repeated and massive blood transfusions. Dr. White found that the Barnes Hospital was a first class community hospital, with a central operating floor, where a great variety of surgical work could be observed at one time.

In Chicago the surgical work of Dr. Arthur H. Curtis was excellent at St. Luke's Hospital, a structure nineteen stories high. Professor J. B. de Lee was responsible for the wonderful technique and most perfect asepsis practised at the Chicago Lying-in Hospital. His operation of low cervical Cæsarean section was perfectly done under local anaesthesia. Dr. Bloomfield had demonstrated some interesting conditions, including one of Dührssen's incision.

A visit to the Mayo Clinic at Rochester was a remarkable and wonderful experience. Dr. James C. Masson, a Canadian, performed a great deal of the gynaecological surgery; he was a quick operator and a very sound surgeon. The close and intimate contact of the "living" pathologist, Dr. MacCarty, and his assistants, with the operating theatres at St. Mary's Hospital, had often led to the earliest diagnosis of unsuspected malignant disease, with immediate and suitable surgical treatment. The Institute of Experimental Medicine was well equipped and the research work carried out there, for example, upon "focal infection," was both interesting and instructive. At Detroit the Henry Ford Hospital had been visited; the work was of a high standard and there was a remarkable amount of equipment. Several days had been spent at Ann Arbor and at Cleveland. Dr. W. H. Weir was at the head of the Gynaecological Department of Lakeside Hospital, Cleveland, where a high standard of surgery was maintained and much research work carried out.

A visit to Dr. Potter at Buffalo was of particular interest. Dr. Potter carried on a very large obstetrical practice, wherein he converted by internal version each normal vertex presentation into a breech and thus delivered the patient. A detailed description of his methods was given. Whilst his skill and dexterity were to be admired, this amazing practice of Potter must be emphatically condemned.

The new Medical Centre in New York was a remarkable collection of hospital buildings twenty-two stories high. Here Professor B. P. Watson from Edinburgh had recently taken charge of the obstetrical department. His work and methods of teaching made a profound impression upon the visitor.

Dr. I. C. Rubin had tested the patency of the Fallopian tubes of several patients by his transuterine insufflation of the tubes by carbon dioxide gas. He stated that he had the

records of more than two hundred patients with sterility who became pregnant shortly after one such insufflation.

Dr. J. O. Polak controlled the gynaecological department at Long Island College Hospital, where the work was of a high standard. A visit had been made to Philadelphia, Baltimore and Washington. At the Boston Lying-in Hospital Dr. Irving was treating patients with eclampsia by drawing off a litre of blood from the patient, centrifuging and washing out the toxins in solution from the corpuscles; the corpuscles were then transfused back again into the patient. He reported immediate and very considerable improvement.

In America the visitor was much impressed with the success of the community hospital system and all the Victorian ideals in private hospital and public hospital practice were carried out to perfection there. In anaesthesia induction was made by gas and oxygen, followed by ether. Ethylene was used a great deal too. Almost universally anaesthetics were given and well given too by nurses specially trained as anaesthetists. Spinal anaesthesia was commonly used at Rochester and Boston. The dietitian, usually a lady graduate in domestic economy, was an important official at most hospitals, where she and her assistants worked in perfect amity with the nursing staff. Clinical staff meetings were held once a week and cases were well presented.

In Canada, both in Toronto and Montreal, the hospitals were of a high standard and the work first class. At Montreal the Mount Royal Hospital was wonderfully placed on the slopes of Mount Royal and alongside McGill University. Here there was a magnificent new private wing, the gift of a generous benefactor, and this was equipped for general surgery, gynaecology and obstetrics.

In Liverpool Professor Blair Bell had treated more than one thousand patients suffering from malignant disease by means of his lead therapy. Dr. White saw many patients undergoing treatment quite comfortably, with practically no reaction. His impression was that lead therapy was sometimes successful in vascular types of malignant disease, as sarcoma, but in rodent ulcer and carcinoma of the cervix of the uterus the results were disappointing.

In Manchester the Manchester (Fothergill) type of operation for genital prolapse was of course commonly employed. This operation had first been developed by Donald and later by Fothergill and had been commonly used at the Women's Hospital, Melbourne, during the past ten years.

Professor Fletcher Shaw was most hospitable and the visitor enjoyed his teaching and his operative work. A pleasant week had been spent in Edinburgh, where the work was as solid, sound and clear cut as ever. Dr. Sam Cameron, of Glasgow, was certainly the quickest operating gynaecologist he had seen. At the Royal Maternity Hospital, Glasgow, there were 4,000 childbirths *per annum*; these figures included those for the extern department, which was a very large one. Of these confinements 75% were abnormal.

In London the Chelsea Hospital for Women was an attraction. Mr. Victor Bonney had several times carried out Wertheim's panhysterectomy brilliantly and also his own myomectomy operation. The gynaecological work at Saint Bartholomew's, Saint Thomas's and the Samaritan Hospitals was very interesting.

Dr. Robertson controlled the diathermy clinic amongst gynaecological patients at Saint Bartholomew's and Middlesex Hospitals and he was obtaining good results. Dr. Remington Hobbs was largely employing his glycerin therapy for uterine troubles with considerable success. The outstanding feature of a visit to London was the general use of radium in the treatment of cancer. Radium puncture, by means of platinum needles containing small amounts of radium, was being extensively used instead of surgery. Donaldson and Keynes, of Saint Bartholomew's, had obtained striking results by this method in cervical and breast cancers.

A visit to the Fondation Curie in Paris was most interesting. Here radon or radium emanation in platinum

needles was used and there was a large and powerful deep X ray therapy installation.

In Vienna surgery predominated in the treatment of epithelioma of the cervix. At the Peham Klinik, Schauta's vaginal hysterectomy was well performed; on the other hand, Wertheim's abdominal panhysterectomy was done in the Kermauner Klinik close by. Professor Adler, at the Wilhelmina Hospital, did Schauta's vaginal hysterectomy very skilfully under local anaesthesia; he finally implanted into the lateral fornices fifty milligrammes of radium for eight hours. Adler claimed a low primary mortality and a good percentage of cures after five years.

Cinematograph Film of the Circulation of the Blood.

Dr. A. E. ROWDEN WHITE showed a film which had been arranged for the Royal College of Physicians of London on the occasion of the three hundredth anniversary of the publication of William Harvey's "*Exercitatio Anatomica de Motu Cordis et Sanguinis*." In the film the various stages of Harvey's work and discoveries were depicted.

Medical Societies.

THE CLINICAL SOCIETY OF THE MATER MISERICORDIÆ PUBLIC HOSPITAL.

A MEETING OF THE CLINICAL SOCIETY OF THE MATER MISERICORDIÆ PUBLIC HOSPITAL was held at the Mater Misericordiæ Public Hospital, Brisbane, on April 16, 1929, Dr. E. D. AHERN, the President, in the chair.

Myeloma of the Tibia.

Dr. L. M. McKILLOP showed a patient with extensive myeloma of the head of the tibia which had been treated by local excision followed by deep X ray therapy. The patient, a woman, thirty-two years of age, had been admitted to the hospital on December 14, 1928, complaining of pain and disability in the region of the right knee joint. X ray examination, previous to her admission, by Dr. Val McDowall, had revealed a spontaneous fracture of the tibial head in association with a large central tumour which had practically replaced the whole of the head of the tibia. A provisional diagnosis of myeloma had been made. On December 16, 1928, through a vertical incision Dr. McKillop had exposed the tibial head and curetted away the contents of the tumour mass, until finally only a thin shell of bone was left. The knee joint had been found free of invasion. Bleeding had been very free and was controlled only by tight packing. Deep X ray therapy had been administered by Dr. B. L. Clarke on January 24 and 25, 1929, and a third treatment had been given in February. A further X ray examination in April, 1929, had shown that the large cavity was almost filled with granulation tissue and new bone element and members agreed after seeing the patient and the films that the restoration of structure and function had been almost perfect. Dr. McKillop said that the patient would be examined by X rays for a time at regular intervals to observe the consolidation of the tibial head. There was no pain, limp or any evidence whatever of disability.

Dr. McKillop reminded members that there were two classes of myelomata. The solitary type was found usually in the lower end of the femur, upper end of the tibia and the radius and humerus. These myelomata were relatively non-malignant, being unassociated with metastases and only liable to local recurrence if the primary clearing out was incomplete. He regarded the post-operative deep radiation as a distinct step forward in the treatment of the condition, as the rays killed any remaining embryonic cells and moreover stimulated the regeneration of the bone.

Multiple myelomatosis, on the other hand, was a very malignant condition and was associated with the appearance of albuminoses in the urine (Bence-Jones bodies). Nothing could be done for the condition, though in America attempts had been made to irradiate the tumour in the hope of causing regression. It was probable that multiple myelomata at any rate were really awakened embryonic rests.

Landry's Paralysis.

Dr. F. C. BECHTEL showed a patient, aged twenty-nine years, who was suffering from Landry's paralysis. The patient was married, he was a labourer and had resided in Brisbane all his life. He had been admitted to hospital on March 25, 1929, with a history that one week previously he had had pain in the abdomen on walking. Two days later he had gone to bed with cramps in both legs. Next day he had got up and had felt alright. Then three days before admission his legs had suddenly given way under him and since then he had been unable to use them. He had found that he could move the toes of the left foot, but not of the right foot. He had had no previous illnesses. The family history was clear. He denied venereal infections.

On examination the patient was a normal, intelligent person, well nourished. His heart and lungs appeared normal. The abdomen was flaccid with loss of reflexes. The lower intercostal muscles were paralysed and breathing was chiefly diaphragmatic. There was no loss of power of the sphincters, the bladder and bowels acted well.

There was flaccid paralysis of both lower limbs with absence of reflexes. Weak extensor movement of the toes of the left foot was present. There was no difficulty with respiration. The temperature was 37.5° C. (99.6° F.). The respirations numbered 24 and the pulse rate was 88 on admission. After being in hospital four days the respiratory rate had risen to 44 in the minute with increasing difficulty in bringing up mucus and the temperature had risen to 38.3° C. (101° F.). Raising the foot of the bed and turning the patient on his face had allowed the mucus to drain and had given relief.

The Wassermann test had yielded no reaction. On lumbar puncture the fluid had been under increased pressure and clear. The cell count had been two cells per cubic centimetre (a normal finding).

Microscopical examination of the urine had revealed a few pus cells, a few red cells, triple phosphates. The reaction of the urine had been alkaline and the specific gravity 1020. It had been straw coloured and a cloud of albumin and pus had been present, but no sugar or bile had been found. The condition was one of Landry's paralysis.

In regard to treatment, the lower limbs had been placed in splints and massaged daily. The patient was to have diathermy later. Stimulants were being given when the respirations were laboured.

Syphilitic Heart Block.

Dr. ELLIS MURPHY showed a woman, *etatis* thirty-nine, who had been married for twenty years, but had had no children or miscarriages. She had been an active and apparently healthy woman until three days before admission to the hospital on January 28, 1929.

Her illness had begun with fainting turns in which she lost herself for a few seconds and sometimes fell over, but she did not have any movement of her limbs during an attack. These "turns" had become more frequent and on the morning of her admission to the hospital she had had fifteen of the seizures.

On examination she appeared a strong, healthy-looking woman, with a good colour and lay comfortably in bed. Her pulse rate had been 54 per minute, her temperature 36.9° C. (98.4° F.) and her respiratory rate 22 in the minute. The apex beat had been in the nipple line, palpable with difficulty and the heart sounds had been distant, with a little roughening of the first sound in the aortic area. The lungs had been clear, as also the abdominal organs and the nervous system. There had been an ulcer with a serpiginous margin on the outer and upper aspect of the left thigh.

The provisional diagnosis had been toxic heart block, probably syphilitic in origin. While waiting for two days for the result of the Wassermann test she had been given a mixture containing quinine and strychnine, but her pulse rate had fallen to 38 in the minute and she had had several seizures while lying in bed. During the "turns" she felt "faint and frightened." The resident medical officer had been fortunate enough to have his stethoscope over the patient's heart during one of the turns, when he noticed that the heart ceased beating altogether for three or four beats.

On receipt of a "++++" response to the Wassermann test she had been treated with mercurial innunction. Five days later the pulse rate had gone up from 38 to 76 in the minute and she had complained of soreness of her teeth. The innunction had been stopped for two days, when her pulse rate for a short period had dropped to 38, but on the treatment being continued it had again assumed the rate of 76 and it had remained at about this rate.

In this patient's case, it was considered safest to give mercury innunction with a mixture of perchloride of mercury and potassium iodide. The ulcer of the thigh had gradually healed, leaving a pigmented scar. The diagnosis appeared to be that of a gumma of the conducting mechanism of the heart, of the bundle of His. The interest of the case lay first as demonstrating one likely method of sudden death with syphilis, from complete heart block, and secondly, in the resumption of the normal pulse rate synchronous with the onset of mercurialism.

Splenomegalic Polycythemia.

Dr. Murphy also showed a male, *etatis* fifty-eight, who had been admitted to hospital on January 3, 1929, with a letter from his doctor in the country stating that the patient had a very enlarged spleen which was getting larger rapidly, and increasing weakness which prevented him from working. The patient had stated that he had been failing in strength for the last five or ten months after having measles during an epidemic. He had not noticed the lump in his side.

On examination the man had been wasted, with a very prominent abdomen, but the most remarkable feature had been the bright red colour of his face and hands and there had been a bright red morbilliform rash on his chest and back and to some degree on his thighs, as well as here and there a few petechial hæmorrhages. The heart had not been dilated, the sounds had been clear, but there had been signs of some œdema at the base of both lungs. The abdomen had been prominent, the spleen greatly enlarged, the right border extending 3.75 centimetres (one and a half inches) to the right of the umbilicus and the lower pole level with the *symphysis pubis*. The liver had also been enlarged, but soft and had reached three finger breadths below the right costal margin.

The urino-genital system had been normal, also the nervous system. The conjunctivæ had been very injected and the veins of the retina enlarged and dark in colour, but no retinal hæmorrhages had been seen. The systolic blood pressure had been 115 and the diastolic pressure 80 millimetres of mercury.

A blood examination had yielded the following information:

Erythrocytes, per cubic millimetre ..	8,430,000
Leucocytes, per cubic millimetre	50,000
Neutrophile cells	49%
Myelocytes	51%

Numerous myelocytes of all types and megaloblasts had been present. The diagnosis had been one of *polycythemia vera*, splenomegalic polycythemia or Vaguez-Osler disease. The patient had been given increasing doses of benzol and X ray treatment to his long bones and spleen.

Blood examination had been made every few days as follows.

On February 11, 1929, the erythrocytes had numbered 8,200,000, the hæmoglobin value had been 120%. The leucocytes had been 53,100 per cubic millimetre, the platelets 480,000 and myelocytes and megaloblasts had been present in large numbers. On this day he had had his first exposure to ordinary X rays.

On February 13, 1929, the erythrocytes had numbered 7,780,000 and the leucocytes 44,400 per cubic millimetre. Again X ray treatment had been given.

On February 15, 1929, the hæmoglobin value had been 100%, the erythrocytes had been 5,830,000 and the leucocytes 47,800 per cubic millimetre. On February 17, 1929, the hæmoglobin value had been 105%, the erythrocytes had been 7,280,000 and the leucocytes 49,400 per cubic millimetre. On February 27, 1929, the hæmoglobin value had been 120%, the erythrocytes had been 8,570,000 and the leucocytes 43,600 per cubic millimetre.

On March 1 and March 2 X ray treatment had again been applied.

On March 2, 1929, the hæmoglobin value had been 118%, the erythrocytes had been 9,860,000 and the leucocytes 59,300 per cubic millimetre. On March 21, 1929, the hæmoglobin value had been 110%, the erythrocytes had been 8,260,000 and the leucocytes 52,900 per cubic millimetre.

On March 26 deep X ray therapy had been applied to his spleen and long bones.

On March 31, 1929, the hæmoglobin value had been 110%, the erythrocytes had been 8,260,000 and the leucocytes had been 33,600 per cubic millimetre. On April 4, 1929, the erythrocytes had been 9,210,000 and the leucocytes 17,800 per cubic millimetre. On April 10, 1929, the hæmoglobin value had been 110%, the erythrocytes 6,900,000 and the leucocytes 13,500 per cubic millimetre. Only one myelocyte had been seen, some megaloblasts and normoblasts had been present.

The interest of this case was the result of the deep X ray therapy. One exposure had produced a much greater fall in both the red and the white counts than four exposures of the ordinary X rays and had also reduced the size of the spleen.

The blood counts showed that the leucoblastic tissue was much more susceptible to the effects of the X ray therapy than the erythroblastic tissue. The red cell count had not fallen till fifteen days after the exposure to the deep X ray therapy.

This case also tended to show the danger of too prolonged or too frequent exposure to deep X ray therapy and in this case at least it would appear not to be difficult to produce a serious leucopenia and anæmia.

The low blood pressure was also of interest, as many observers had stated that a high blood pressure was a necessity in the disease, because of the blood's increased viscosity. Gisbök had even described *polycythemia hypertonica* in which the increase of blood pressure was a prominent feature.

Acute Poliomyelitis.

Dr. Murphy's last patient was a male, *etatis* thirty-five, who had complained of having a slight pain between his shoulders. The next morning he had had pain in the back of his neck. The pain had continued and had become more severe and he had been feverish, but had managed to pass the day. The pain had been very severe the next day, he had sweated several times and had become very weak. On the sixth day after the onset of the illness he had felt better and had tried to get up, but had found that he was paralysed in his left arm and was very weak in his other limbs and then he had come to hospital. He had previously been healthy, was married, had two children.

On examination he was of good colour, his temperature was normal, the pulse rate was 80 and the respiratory rate 24 in the minute. He lay comfortably in bed, but complained of soreness in the muscles of his neck, arm, back and legs when they were handled. The left arm was paralysed, the paralysis of the deltoid, the biceps and triceps being complete; the movements of his hand were good. The tendon reflexes were absent.

There was considerable weakness in the muscle of the right arm and of both legs. There was very slight response in the tendon reflexes of the right upper extremity and lower limbs. The plantar reflex was flexor. The right abdominal reflexes were absent and there were no sensory changes. The neck was painful in bending the head forward and pain was produced in attempting to elicit Kernig's sign. The cerebro-spinal fluid was quite clear and under slightly increased pressure. There was a leucocytosis of 30,000 with 80% polymorphonuclear cells. The Wassermann test yielded no reaction.

The diagnosis was one of acute poliomyelitis. The lack of any sensory changes, the affected parts being chiefly proximal and the lesions being scattered, rather excluded acute toxic polyneuritis. His paralysed muscles had been put at rest and hexamine in doses of 0.6 gramme (ten grains) was being given three times a day.

The case was of interest in that poliomyelitis was mainly a disease of small children and secondly because of the relationship with the condition of the patient shown by Dr. Bechtel.

Obituary.

ARTHUR PERCY WALL.

THE medical profession contains many members whose services to humanity are never recorded, whose achievements are known to but a few and influence for good cannot be measured. Some of these men give their energies, the products of their well trained intelligence to all who seek their aid, and ask for little in return. They are satisfied with the knowledge of duty fulfilled, of having striven continuously to save life, to conquer disease, to mitigate suffering. Almost unconsciously they reap a rich reward in the high esteem and affection of their fellow men. Arthur Percy Wall, whose death was announced in a previous issue of this journal, was a man of this type. His death at the age of fifty has created a very widespread regret among all kinds and conditions of men.

Arthur Percy Wall was born in Coogee, near Sydney, on March 27, 1879. His father is a well known man in the commercial world of Sydney and commands universal respect. Arthur Percy Wall was educated at the Sydney Grammar School, where he won many prizes at sports and in the class room. He was keen on sport from his school days and was a fine athlete, a keen footballer and a sound cricketer. In due course he entered the University of Sydney and studied for a degree in Arts. Early in the present century he was sent to Scotland and entered the medical school of the University of Edinburgh. He worked hard and well and made his mark among the men of his year. In his leisure time he played equally hard and here also he gained distinction. He was chosen a member of the Edinburgh-Australian Cricket eleven. In the year 1906 he took the degrees of bachelor of medicine and bachelor of surgery. After graduation he served as clinical assistant and house surgeon at the Edinburgh Royal Infirmary. The value of a house appointment at this celebrated and ancient hospital is well known. Wall made full use of the opportunity to render himself proficient in many branches of his profession. In 1909 he returned to Australia and settled almost at once at Randwick in partnership with Dr. J. Adam Dick. He was enthusiastic in all he undertook and it was little wonder that his practice grew rapidly from the start. Within a short time he was appointed honorary medical officer to the Little Sisters of the Poor at Randwick, a position he held for upwards of twenty years. In the same year he joined the Australian Military Forces as Captain in the Australian Army Medical Corps Reserve. Four years later he was transferred to the Australian Army Medical Corps. During the first six years of his practice at Randwick and Coogee he worked untiringly. He was an exceptionally

sound practitioner and his diagnosis and judgement were seldom challenged by his colleagues. He was a close observer and had a remarkably clear mind. All this enhanced the value of his services to his patients and rendered his aid to rich and poor of inestimable worth. When war broke out he offered himself to the authorities and was appointed adjutant to the Third Australian General Hospital with the rank of captain. He served at Lemnos, in Egypt and later in France. In May, 1915, he was promoted to the rank of honorary major. In 1917 he was invalided home to Australia, when he was appointed temporary lieutenant-colonel while acting as President of the Permanent Medical Referee Board. He was appointed visiting physician at the Prince of Wales Hospital, Randwick, under the Defence Department. He devoted much of his time to the soldier patients at this institution. Later, when the hospital was taken over by the Repatriation

Department, he continued to give invaluable service. In addition to this military service, he identified himself with civil ambulance work. He was a member of the Red Cross Society, of the Saint John Ambulance Association and Brigade and of the Eastern Suburbs District Ambulance. He was one of the founders of the last named. He was also instrumental in the institution of the Coogee Life Saving Association.

When he returned to practice, he learned that his old patients had not forgotten the skilled and sympathetic physician who was at all times prepared to give his best services. He was quite unselfish and was always considerate in his dealings with others.

In private life he was as kindly, as courageous, as humorous and as strong as he was in his professional life. He was a keen gardener, a lover of nature and an admirer of things beautiful. He was generous and philanthropic and had little sympathy with the commercial aspects of medical practice. He married Miss Maclean in 1921. The sympathy of the medical profession is extended to her and their two children.



Correspondence.

THE PREVENTION OF DISEASE.

SIR: Your editorial note on my letter of July 15 calls for further comment.

In support of the suggestion that the Commonwealth Health Department should induce the States to remodel the principles of administration on a model plan, let me quote the Editor's own words from his editorial of January 16, 1926: "Every endeavour should be made to secure frank and friendly cooperation between the State Departments of Public Health and what is usually termed team work. That the services of the Commonwealth authority can and should be utilized to bring about such a desirable state

of affairs is the text of the report" (of the Royal Commission).

To dilate upon the recommendations of the Commission that have not come into effect, would almost fill an issue of the journal, as will be obvious to anyone who takes the trouble to read the report of the Commission. Amongst others one refers to recommendations in regard to tuberculosis, the proposed amendment of the *Maternity Act*, industrial hygiene, venereal diseases, medical research council *et cetera*.

The Hone-Newland report is unfortunately merely a decoration of an official pigeon-hole.

If the Editor would take the trouble to reread my letter, he would see that there was no suggestion for representation at a conference of premiers. It should be obvious to him that there would be no better time or place to urge the adoption of what he considers is the policy of the medical profession in the Commonwealth than when Federal and State Premiers are assembled.

In regard to the Federal Health Council, one quotes from the report of the Commission: "If it should appear to the Government at any time that advantage would result from closer association between the Federal Health Council and the medical profession not more than two representatives nominated by the Federal Committee could be appointed."

The Council of the Queensland Branch has made the recommendation that there should be such representation, a fact overlooked by the Editor. "It would serve no useful purpose if the general practitioner were represented on the Federal Health Council" has a departmental smack.

In regard to a practical policy for the profession, the outline of such a policy was published by the Queensland Branch Council several years ago and members of the conference of contract practitioners have made most useful suggestions in this respect that have received scant consideration.

One is pleased to end on a note of agreement with the Editor who wrote in an editorial, December 6, 1924: "It would have been better had the Government selected as the fifth member of the Royal Commission a well known financial expert."

Yours, etc.,

E. S. MEYERS.

SIR: Your statement, in a reply to a letter from Dr. E. S. Meyers, that the report of the Commission on Health was endorsed by the Australian Branches of the British Medical Association, is not strictly true. The Victorian, Queensland and, I believe, Western Australian Branches have passed resolutions in direct opposition to the scheme of control of medical research recommended by the Commission. Its finding on this point could have been forecasted from inspection of its personnel, but even then it was, to me at least, most surprising that the Commission should have

ignored the memorandum presented to it by Professors Berry and MacCallum on behalf of the leading laboratory workers of the country who surely should know what suits them.

It seems to me that if our aim is to secure the best results, to place medical research in the control of the Federal Health Department which exists for quite another purpose, and above all to put on a research council as an *ex officio* member the service head of the department, whoever he may be now or in the future, would be an act of folly.

Some such consideration evidently induced the British Government to take research away from the insurance department and place it under the Privy Council, to be run by research experts of unimpeachable standing and superlative merit.

As in Great Britain our medical research council should be itself a department of State, responsible directly and only to a Minister of State.

In a memorandum I prepared for the Queensland Branch on national insurance I showed how a research scheme could be financed. There is in the constitution of the Medical Research Council of Great Britain a plan ready made. There is now nothing left but to get on with the work.

Yours, etc.,

J. V. DUHIG.

Wickham Terrace,
Brisbane.

September 9, 1929.

[Dr. Meyers quotes from a leading article published in the issue of THE MEDICAL JOURNAL OF AUSTRALIA in which the text of the report of the Royal Commission on Health was reproduced. The complete sentence is: "If it is impracticable or inexpedient in 1926 to advocate the transfer of the control of health matters to the Federal Parliament, the Department of Health of the Commonwealth should be given extended powers and every endeavour should be made to secure frank and friendly co-operation between the State Departments of Public Health and what

is usually termed team work. That the services of the Commonwealth authority can and should be utilized to bring about such a desirable state of affairs is the text of the report." The machinery suggested in the Royal Commission's report is the amendment of the *Quarantine Act* 1908-1924 by the addition of the words "and in promoting public health," legislation to enable the Commonwealth to establish a health council, to provide university and other training in public health and to enable the Commonwealth to subsidize State or local authorities in connexion with measures approved by the Commonwealth Department of Health and legislation to provide for the establishment of laboratories. It would appear that the Commonwealth authority has followed this plan. The department is taking an active part in the promotion of the public health; the Federal Health Council has been established; the Commonwealth Government is instituting a school of public health and tropical

hygiene in the grounds of the University of Sydney; the Commonwealth Government has offered subsidies to the State or local authorities for many purposes; laboratories have been established in many situations and are serving their purpose most admirably. On the other hand no attempt seems to have been made by the State governments to find a formula on which uniform health legislation could be drafted. The Federal Health Council has served a useful purpose, but its activities have been restricted by the fact that no effort is being made to provide the uniformity of legislation and administration to which the Royal Commissioners referred, as well as the general cooperation between the departments of public health of the States. Dr. Meyers's complaint concerning the recommendations of the Commissioners that have not yet been adopted, is partly justified, since several have yet to be translated into action. It should, however, be recognized that the Commonwealth Government has performed the fundamental tasks essential to the whole scheme and can do little or nothing more until and unless the State Governments are prepared to carry out their parts.

Dr. Meyers distinctly stated in his previous letter that neither the general practitioner nor his representative was present nor consulted at the conference of premiers. In regard to the suggested representation of the Federal Committee on the Federal Health Council, it is difficult to understand how any government would arrive at the conclusion that advantage would result from this step under the circumstances referred to above. Moreover, no proposal has yet been adopted by the Federal Committee in connexion with any representation on the Federal Health Council.

Dr. Meyers seems to have misunderstood the significance of the Hone-Newland report. It is a report to the Federal Committee which has been discussed by all the Branches of the British Medical Association in Australia. The replies and commentaries were considered by the Federal Committee at its meeting on February 4 and 5, 1925. The Federal Committee adopted a series of resolutions arising out of the report (see THE MEDICAL JOURNAL OF AUSTRALIA, February 28, 1925, page 224). Since these resolutions were passed by the representatives of the several Branches, they must be accepted as the policy of the Branches. The Hone-Newland report and the resolutions are not official reports residing in dust-laden departmental pigeon-holes, but are live documents on which the medical profession has declared its policy through the mouthpiece of the Federal Committee.

Dr. Duhig is in error. The Federal Committee submitted the report of the Royal Commission on Health to the several Branches after its meeting in February, 1926, and on August 25 and 26 of the same year it considered the comments and suggestions of the Branches. The Victorian Branch, the New South Wales Branch and the Western Australian Branch submitted certain comments, none of which had reference to the proposed medical research council. After the comments had been considered, the Federal Committee resolved again to approach the Federal Government and the Minister for Health asking for an opportunity to discuss with them any proposals for fresh legislation arising from the report.

At a later date a motion was submitted to the Federal Committee by Dr. W. N. Robertson. The late George Adlington Syme, in speaking to the motion, pointed out that the Queensland members had apparently forgotten the recommendation of the Royal Commission. After reciting the proposed constitution of the council, he stated that a council constituted in the manner indicated would not, in his opinion, be subject to the Public Service Regulations. A modified resolution was passed which is substantially the same as the recommendation of the Royal Commissioners. We take this opportunity of suggesting that if some generous support is accorded to medical research without restriction to any particular branch, it may be advisable to establish a non-official body, representative of the various interests, to undertake the coordination of medical research in the Commonwealth.—
[Editor.]

THE MEDICAL PROFESSION AND THE NEWSPAPERS.

SIR: If an explanation be needed initially for a layman's approach to a medical journal, I would suggest at once that the occasion has arrived for consideration of an adjustment of the relations existing between the medical profession and the newspapers of Australia generally and of Sydney in particular. Here are two potent forces that should be marching more or less shoulder to shoulder towards the haven of national welfare. Who will say that they are doing so? Actually, they are grievously out of step, collectively if not as units. It is time that a better perspective was secured.

The medical view of this situation would be interesting to journalists. The journalistic view, the considered opinion of many representative newspaper men, is that the medical profession is unnecessarily hampered in its discharge of a heavy public obligation by an unnecessarily rigid interpretation of the word etiquette. It would be both idle and foolish, of course, to attack the principle of professional etiquette; all that is submitted here is that the term is overworked and its significance unduly elevated.

Surely it is a little absurd to find a medical practitioner rushing into official print to explain that his name slipped into some newspaper without his consent, a modest fact which few would have remarked upon had not the doctor himself sounded the loud timbrel in the medical journal! Surely, too, it is a little absurd when a sober newspaper is refused permission to publish a photograph of a doctor who for specially meritorious work has been awarded a public society's medal.

I cite the foregoing cases, both recent, as typical of occasions when etiquette becomes unhealthy, at which stage the intelligent layman ceases to applaud and merely deplores. Such cases, however, are relatively trivial. The chief danger of an overdose of etiquette, it would seem, is its effect on the medical profession in relation to education affecting the public health. Australian newspapers have printed much material on the subject of cancer, ranging from discussion of the researches of Guy¹ and Barnard on causation to the potentially curative work of Blair Bell with colloidal lead, but practically the whole of this advice has come from overseas. More recently Sydney journalists have found Professor Chapman a welcome source of information on cancer research. Professor Sandes, too, has rendered service by affording material for public information on this vital subject; and it is noted by journalists that he pleaded strongly at the medical congress for an effective propaganda campaign in relation to cancer. But the medical profession as a whole in Australia has done little or nothing to assist the newspapers in educating the public on the point that cancer is curable in its early stage. It is a grave neglect of opportunity and a neglect that should not be maintained.

So with regard to other diseases upon which public education is desirable, no individual doctor is able to give public advice the support of his name and nobody representative of the profession as a whole ever appears to dream of exercising its power through the readiest and most effective means of reaching the people, *id est* the newspapers. So, too, in regard to quackery. The medical journal printed a trenchant article on this subject recently. Is the matter to end there? I suggest in this connexion that the medical journal is in the position of a prohibitionist addressing a Rechabite lodge and that the greater good would be secured if a sturdy circular on the subject were addressed by the British Medical Association to every leading newspaper in Australia.

Having thus far offered a soft impeachment of the medical profession in relation to lay journalism, I am bound to concede that journalism is not without sin in relation to medicine. It is true that some newspapers want only the high lights of medical effort and are not concerned with less spectacular work. It is true also that some newspapers are apt to depute ill-informed reporters

¹ Mr. Chisholm is probably referring to W. E. Gye and J. E. Barnard, whose work on Peyton Rous chicken tumours was published in July, 1925.

to treat medical discussions or medical subjects, thus rendering a professional man liable to be misunderstood. But such cases may fairly be regarded as exceptions rather than the rule and, moreover, there seems no sound reason why medical men should be more sensitive than other scientists; zoology, for instance, gets a much rougher handling by newspapers than any other form of biology, but zoologists do not scorn newspapers when agitating for the preservation of Australia's wonderful fauna.

The whole situation, then, calls for an improved attitude and a better knowledge of each other on the part of the medical profession and the newspapers. A healthy portent in this respect is ready to hand. The Rotary Club of Sydney has inaugurated a scheme for the succoring of crippled children and when the club invited the editors of Sydney to discuss the subject recently, representatives of the British Medical Association (*sic*) were present to support the appeal for newspaper cooperation. It was the presence of those doctors and their addresses to newspaper men that stimulated the present letter.

And now I desire to offer the services of the Institute of Journalists to the end advocated. My organization is willing to appoint a small committee of representative journalists to meet delegates from the medical profession for discussion of public health education. The initial meeting, if approved, need not be unduly formal, but might consider broadly a basis for cooperation and perhaps attack at once the matter of cancer propaganda, as suggested by the medical congress and the suppression of quackery, as suggested by the medical journal. Possibly, if auguries were favourable, the delegates could later be resolved into a standing committee for general public service in health education, with particular reference to epidemics.

It should be added that, journalism being a profession *sui generis*, the Institute of Journalists has no direct control of newspapers or newspaper workers. But it has knowledge, inside knowledge, that can be and should be utilized by the medical profession in its public relations.

Yours, etc.,

A. H. CHISHOLM,

President,

New South Wales Institute of Journalists.

Sunday Pictorial,
Sydney.

September 11, 1929.

Diary for the Month.

- OCT. 31.—New South Wales Branch, B.M.A.: Branch.
OCT. 31.—South Australian Branch, B.M.A.: Branch.
NOV. 1.—Queensland Branch, B.M.A.: Branch.
NOV. 1.—Victorian Branch, B.M.A.: Council.
NOV. 5.—Tasmanian Branch, B.M.A.: Council.
NOV. 5.—Eye, Ear, Nose and Throat Section South Australian Branch, B.M.A.
NOV. 6.—Western Australian Branch, B.M.A.: Council.
NOV. 7.—South Australian Branch, B.M.A.: Council.
NOV. 8.—Queensland Branch, B.M.A.: Council.
NOV. 8.—Eastern Suburbs Medical Association, New South Wales.

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xviii.

COMMONWEALTH DEPARTMENT OF HEALTH: Medical Officer.
HERBERTON DISTRICT HOSPITAL, NORTH QUEENSLAND: Medical Officer.

INFECTIOUS DISEASES HOSPITAL, FAIRFIELD, VICTORIA: Consultant Surgeon.

LAUNCESTON PUBLIC HOSPITAL, TASMANIA: Resident Medical Officer (Male).

THE PUBLIC SERVICE BOARD (NEW SOUTH WALES): Principal Medical Officer.

THE UNIVERSITY OF ADELAIDE: Elder Professor of Anatomy and Histology.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 21, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company, Limited. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Contract Practice Appointments in South Australia. Booleroo Centre Medical Club.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Medical practitioners are requested not to apply for appointments to position at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, Sydney. (Telephones: MW 2651-2.)

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